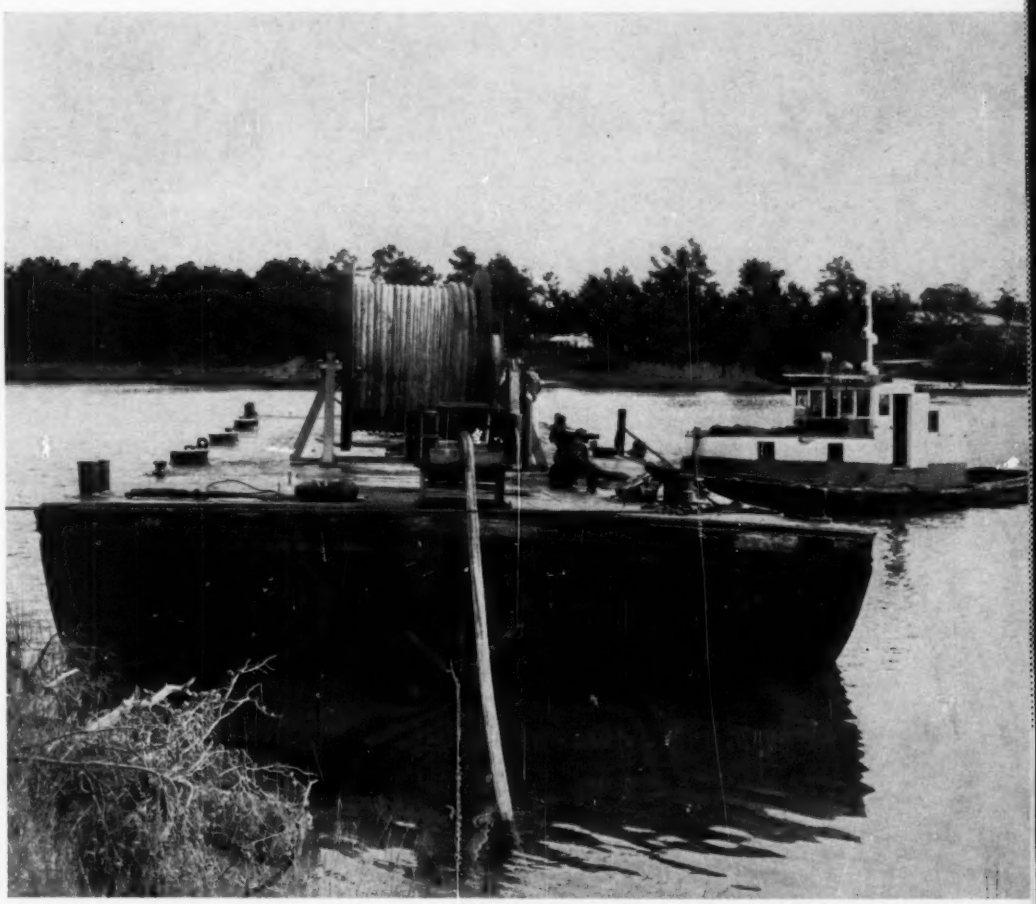
December 30, 1961
Vol. 161 — No. 27

Telephony

THE JOURNAL OF THE TELEPHONE INDUSTRY



This extra-large submarine cable was laid across Garniers Bayou at Fort Walton Beach, Fla., by the Southeastern Telephone Co. Because of its size the cable could not be delivered by truck. It was shipped by special railroad car to Pensacola, Fla. and loaded on a barge by crane. Then barge was towed by a tug. Story appears on page 33.

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MANAGEMENT · PLANT · TRAFFIC · COMMERCIAL · LEGAL · ACCOUNTING

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W. J. Pfaender, *Manager*
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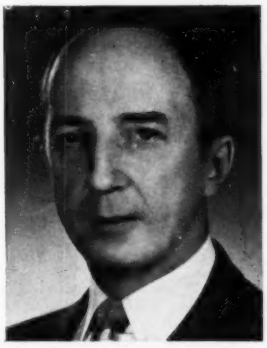

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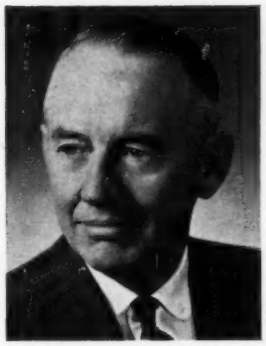

The moment I arrived here, I felt right at home. You've made my job a pleasure with your friendly loyalty. All of us here will strive to deserve your support in the years ahead.

E. R. Sears, Sr., *Manager*
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R. F. Fairly,
Former Manager,
Kansas City Branch Office

1961 was a great year for us, thanks to your loyalty and support. We're looking forward to continued rapid progress in 1962, for you, for us, and for our industry.

W. L. Mollands, *Manager*
Atlanta Branch Office

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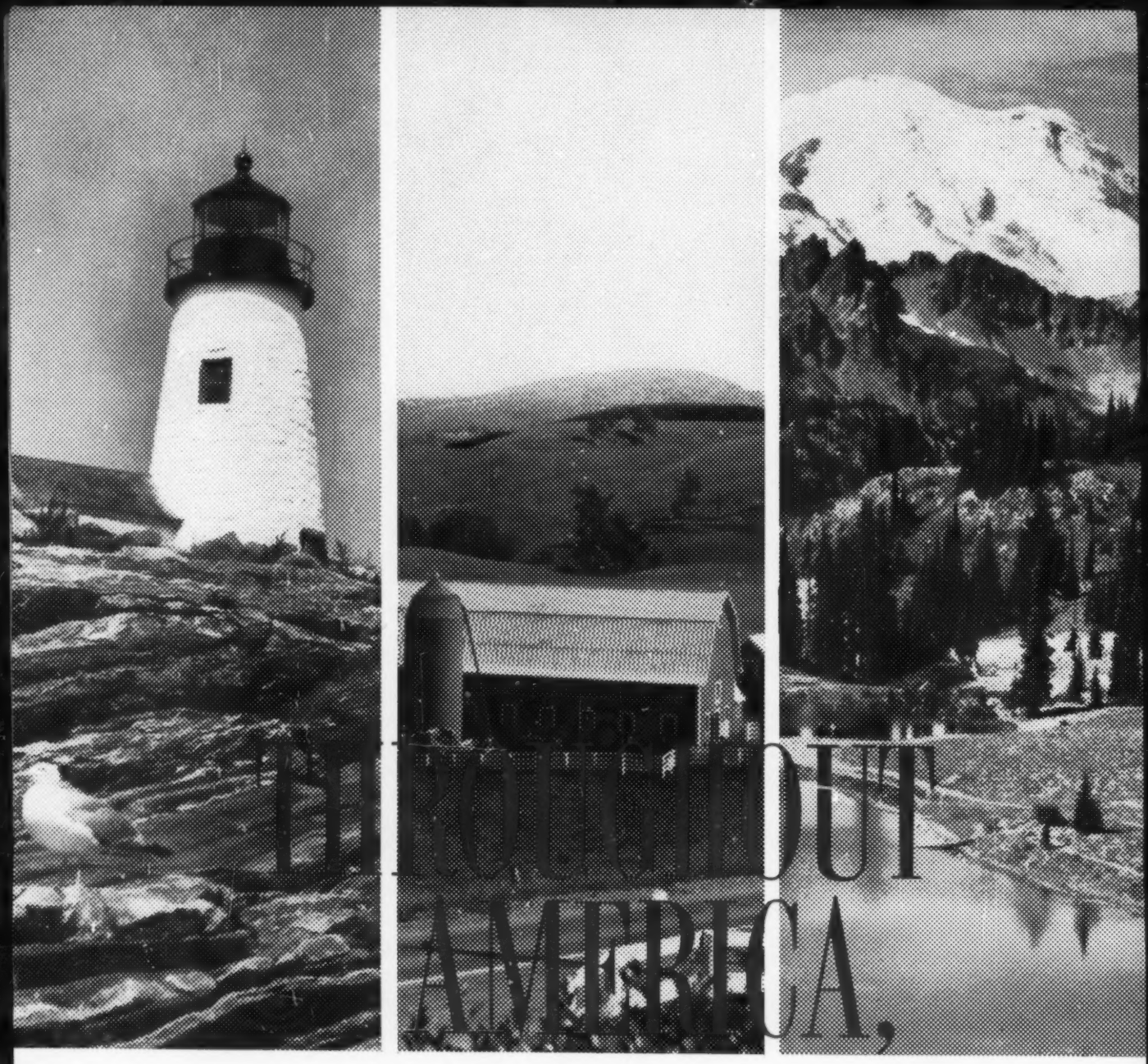
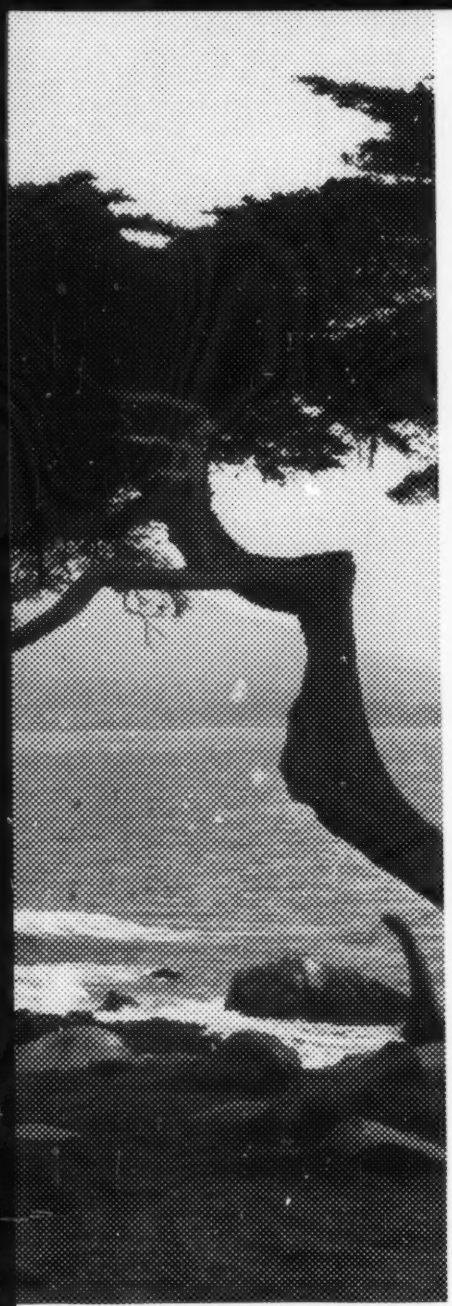


THROUGHOUT AMERICA,

ONE TELEPHONE STANDS OUT



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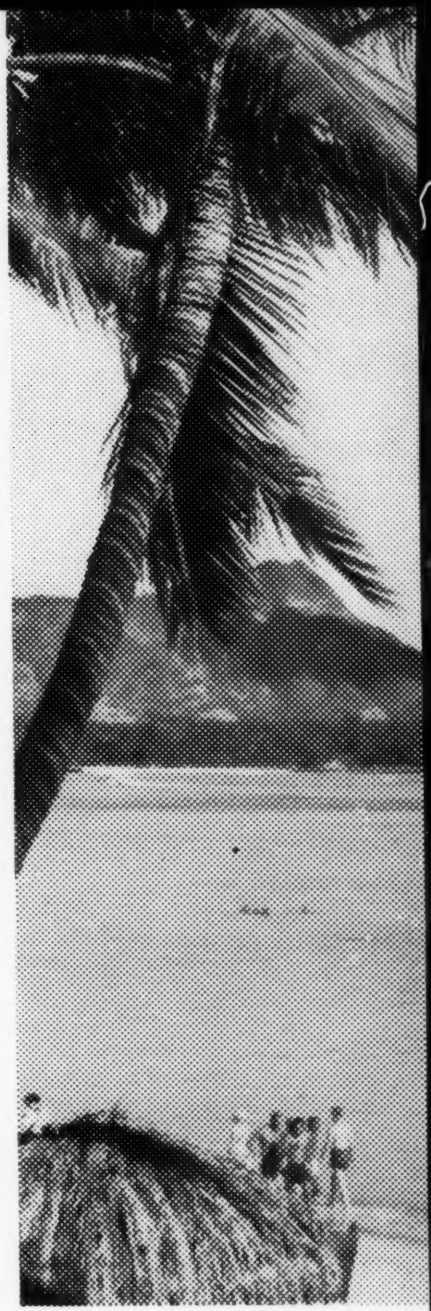

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FLASHES AND PLUGS

ANY SUGGESTIONS? When a man changes from the role of private citizen to that of the President of the United States, certain subtle changes occur, such as in the way he speaks on the telephone. Sometimes, Mr. President, who is still an individual American, broaches some new telephone frontiers and President Kennedy has made the news on this score.

The "New York Herald Tribune" reports that the President has a habit of calling up his staff aides and opening conversations without bothering to identify himself. The chief executive has not indicated to anyone whether this habit is by way of being playful, informal, just time-saving, or whether he does it on impulse.

The "Tribune" says that no one would expect the voice on the telephone to say, "Kennedy here." That might be regarded as a shade too casual.

On the other hand, should he say, "This is the President calling," he might be considered pompous.

Then, there's: "Hello, it's Jack," but even New Frontiersmen would think that too-too informal.

In the face of this etiquette dilemma, the President might be justifiably tempted to open up with "Guess who?" when someone answers his call; and if he did so, he would be setting no precedent, for Cal Coolidge was a great prankster with the White House communication system.

What to do? Apparently, the "Tribune" concludes, the President might as well be a do-it-his-own-way executive, so long as he mostly gets the right numbers.

•

THE WAY TO A MAN'S HEART. An item from St. Louis, Mo., recently recorded that the Louis County revenue director, James W. Hopkins, has banned outgoing personal telephone calls by the department's employes. However, incoming personal calls to married men on the staff are a different matter.

Said Mr. Hopkins, "If a man's wife wants to call him at the office and ask him to bring home a loaf of bread, I certainly do not object to that."

•

FIRST IMPRESSION. Not everyone who makes an observation draws the same conclusion as his neighbor from it. For example, take the impression that three-year-old Steve Janssen, son of Joyce Janssen, Lincoln, (Neb.) Telephone & Telegraph Co. operator at Syracuse, got after an employes' open house.

He observed the business office, where the girls work; the toll and equipment rooms where the wonders include a television 'monitor'; and the operating rooms.

Little Steve put these all together, and when questioned about what he thought of the telephone building, he answered that it was a place where all the women worked and the men watched TV.

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Telephony

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1901 — 60 years — 1961

December 30, 1961

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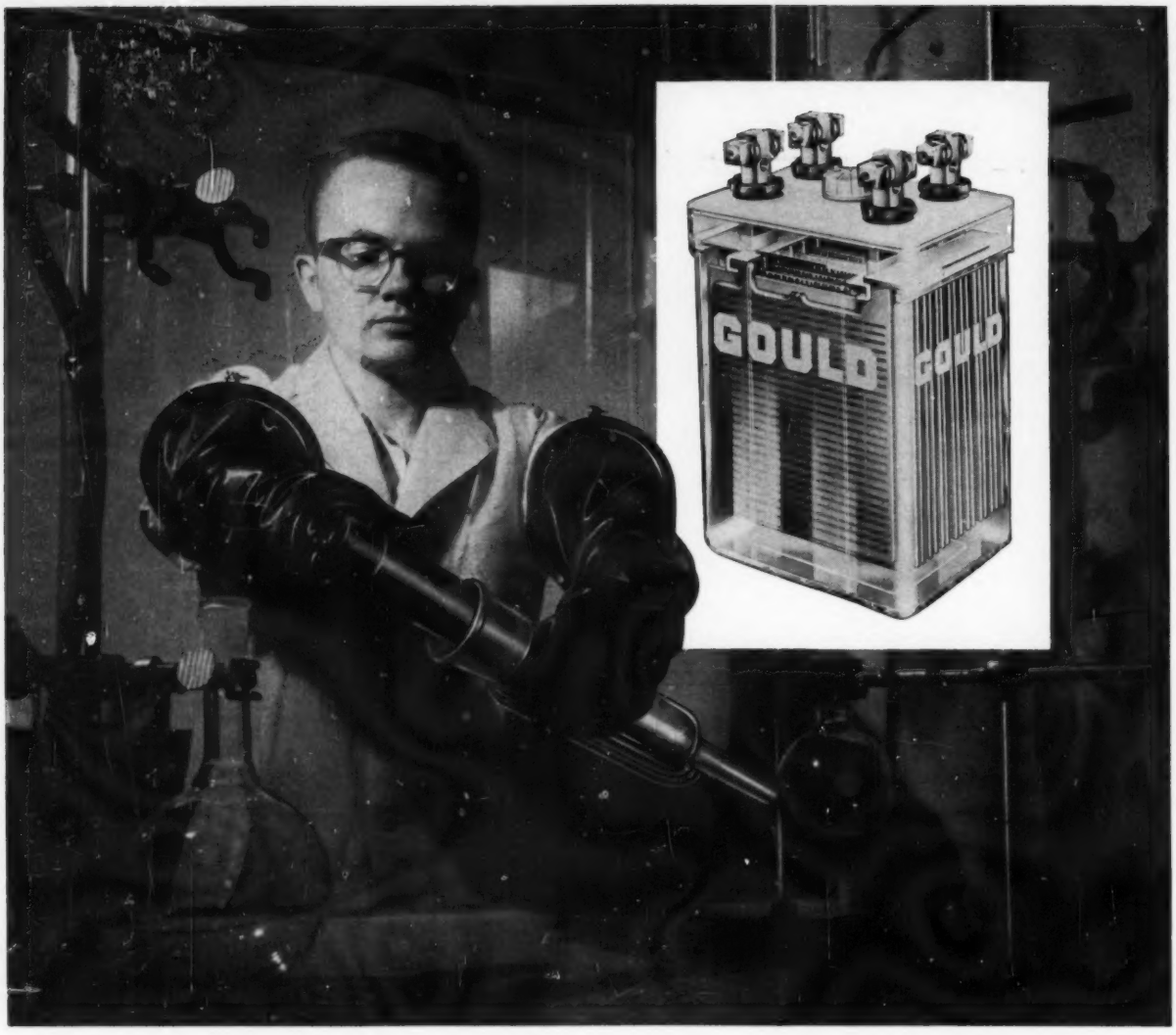

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IN THE NATION'S CAPITAL

BY LAWRENCE J. HOGAN, WASHINGTON EDITOR
and President, Larry Hogan Associates,
Public Relations Firm.

Hogan interviews Welch, gets his predictions on what can be expected in 1962. . . Discusses satellite communications, rate relief, taxes, REA, and labor-management relations.

THIS IS THE time of the year when writers of columns such as this climb out on the end of a limb and make predictions about what can be expected during the New Year. Finding our own crystal ball clouded by our relative lack of experience in the telephone industry, we sought out a man who has been an oracle in the field for over a quarter of a century—Francis X. Welch, editor of the *Public Utilities Fortnightly* and our distinguished predecessor who authored "In the Nation's Capital" for 25 years.

Making predictions is a precarious business, but Mr. Welch has, over the years, scored exceedingly well in the prognostication department. A check of the predictions he made in the Dec. 31, 1960, issue of TELEPHONY against the events which have evolved during 1961 gives him the remarkable score of 80 per cent. This accurate foresight is particularly amazing when you consider that his predictions were made on the threshold of a new administration in Washington.

We confronted Mr. Welch in his Washington office and asked him six questions which are set forth below with his answers.

(1) What is likely to be the final set-up of the communications space satellite program and will this be determined during 1962?

I think this question will have to be settled during 1962. The odds are in favor of some form of privately-owned system, but probably not exactly the plan recommended by the *Ad Hoc* Committee. This plan has been under fire by several left-wingers in Congress and this is very unfortunate. There is evidence that people in the administration who were talking of a privately-owned system originally are now anxious to compromise their position. The best hope for this lies with Congress where, I think, the final decision will be made.

This is an extremely complex problem and the Space Council and the Kennedy administration can't solve it alone. They need industry's help.

As you have reported in your column, Larry, Senator Kerr will introduce a bill which embraces the private ownership concept and there will no doubt be several others tossed into the congressional hopper—on both sides of the issue. I believe some adjustment will be made to broaden participation in the system and even possibly to require the sale of stock to the general public. But this is not particularly important, so long as we keep the main idea that it should be a private enterprise approach.

It will be a hot issue in Congress with a great deal of hooping and hollering, but when the chips are down, the good sense of Congress and the administration should enable them to see the lesson of history. Our telephone industry, for example, would not be the best in the world today—with 56 per cent of all telephones—if we had had government ownership. It could only have been accomplished by private enterprise.

If our government officials don't recognize this, they're more stupid than I think.

(2) Do you think that any communications satellites will actually be launched during the coming year and what's the outlook after 1962?

This is a technical question pretty much outside of my competence, but also involved is the matter of bureaucratic foot-dragging which is very much a part of the Washington scene which I have been covering for some years. I think they will get one, and maybe more, satellites off the ground during 1962.

NASA has made plans and the Bell System and others have agreed on an experimental satellite to be launched during the coming year. It would be criminal to delay it. If any peanut politicians are allowed to stand in the way of such an important world-wide communications system by their bickering, citizens should become justifiably irate.

Just what system will be used—Bell's random satellites at a low orbit or the more expensive plan which calls for fewer satellites at higher altitudes—will probably come in for further discussion. The final decision will no doubt be based on the results obtained from the first demonstrator sent into orbit.

These kinks can all be worked out, but it's the unnecessary delay over non-essentials which worries me. It's like one of our old-time fire companies standing around the firehouse arguing about what harness to use on the horses while someone's house burns.

As I said, unnecessary delay would be criminal. Here we have a clear field for the United States to step out in front of Russia, and we're running the risk of fumbling the ball the longer we delay. Khrushchev has copped one space trophy after another, but as far as is known his progress in space communications is way behind. Echo caught him completely by surprise and he hasn't matched it yet.

The nation which gets its communi-

cations satellites operating first will not only score a tremendous propaganda victory, but will have a significant impact on world culture and politics. In fact, that country's language will likely become predominant in the years ahead.

I can think of no better way for Africans in the jungle or Chinese in the rice fields behind the bamboo curtain to become aware of America's customs, culture, philosophies, standard of living, and free life, than to have them exposed to our radio and television signals which could be beamed to them with little chance of interference by hostile powers. The opportunity is apparent in having our language, music and way of life dramatically brought before these people constantly. What a boon this would be to Radio Free Europe!

We've already seen what can be done in a small way by the infusion of our books, records and motion pictures into foreign countries. Not all of it good, unfortunately, but nevertheless, a powerful influence.

If we let foolish bickering about anti-trust problems and other non-essential things hold us up and enable someone to get ahead of us in this field, the first broadcast via space satellite might be in Russian. If this happens we'd have no one but ourselves to blame. We'd deserve it.

(3) Do you expect a continued high number of rate cases during 1962?

I predicted in 1960 that there would be more rate cases in 1961 than there had been in 1960 which was a year during which we found a tapering off in rate cases. This proved to be the situation. The same villain which caused this will, I regret to say, still be with us during 1962—inflation. There was hope—as well as campaign promises—that the Kennedy administration would stabilize the economy and slow down inflation. It hasn't happened and there's not much likelihood that it will. President Kennedy promised cheaper interest rates. Today they're higher than they have been for years.

During 1962 money will cost more. Telephone companies will have to pay more for bonds and common stocks. Because all expenses of doing business —wages, materials, supplies, capital plant investment—will rise, present rates will not yield a reasonable return on investment. So the obvious result will be more rate cases.

There will be quite a bit of resistance to rate increases on the part of regulatory commissions. Some of them will come through with relief, but not enough of them to satisfy all companies.

Also, as part of the inflationary pressure, I foresee a continued demand on those states which now use a strict "original cost" rate base—two-thirds of the states operate on this system—to shift over to a "present value" rate base, or at least to some recognition of "present value" or a compromise between the two systems. Probably one or more states will change from the "cost" base to the "value" base plan.

About half a dozen states have shifted over to a "value" base or some recognition of "value" since the Korean War. Some state legislatures might order their commissions to change, but this is not likely.

The dispute over separations between the Independents and Bell which has already reached the regulatory level is likely to spread unless the two segments of the industry can get together on a mutually acceptable formula. So far results are inconclusive. If it spreads, some commissions will go one way for Bell and others will go the other way for the Independents. Based on determinations in Ohio, Washington, Indiana, Kentucky and other places, I'd say that the Independents have a slight edge.

(4) Do you think Congress will alter the tax picture for utilities—especially telephone companies—during 1962?

No, I don't. What I've already said about inflation has a tendency to keep pressure on for the collection of as much tax money as possible. President Kennedy has promised a balanced budget for the coming fiscal year, but I don't see how he can do it. The constant drain on our gold supply, increasing cost of armaments and space development, refusal of the administration to back down on some of its grandiose social programs and government ownership ventures into the electric power field are all things which will make federal dollars flow out faster than they come in.

Business corporations can expect to continue to pay taxes at 52 per cent on the top income level.

During the last session of Congress, Kennedy advanced an ambitious program for tax reform including tax credit for plant improvement, altering the tax on dividends and other loophole plugging measures, but it bogged down. It will probably bog down again in the next session. There wasn't much relief for public utilities in the Kennedy tax proposal anyway. The administration seems determined that utilities won't get any comparable advantage from accelerated depreciation programs.

With congressional elections coming up toward the end of the year, there will be a tendency in Congress to do nothing decisive on sensitive political matters, especially taxes.

The 10 per cent excise tax on telegrams and telephone calls will be renewed as in the past. This is unfortunate because every year this tax is continued it becomes a more permanent part of our tax structure and that much more difficult to remove. Telephone companies should keep shooting at it and perhaps someday with enough public support behind them, Congress might repeal these unpopular taxes. One advantage in this bad situation is that Congress must take the positive step of renewing these taxes each year. Each time the excise taxes come up for scrutiny the man in the White House has to apologize for the necessity of continuing them.

(5) Do you look for any changes or trends worth noting in REA telephone loan policies?

No, there will not be much change, as far as I can see, from the policies which have already been pretty clearly enunciated by REA officials. We have the word of the REA administrator that his agency will continue to make all appropriate loans to commercial company borrowers and there is no reason to believe it will do otherwise. We can look for an increase in the ratio of loans to cooperatives vis-a-vis commercial companies, however, but this should come as no great surprise.

Loans at 2 per cent will be continued. The administration has pledged to keep them and there's no real opposition in Congress to upset the arrangement. Last year Congress appropriated about 162.5 million dollars for rural telephone loans, including 30 million dollars for a contingency loan fund. Congress will probably appropriate money in about the same range for the coming fiscal year—about 150 million dollars, give or take a few million.

The total number of farms with telephone service is now estimated to stand at 65 per cent. This figure might jump close to 70 per cent during the coming year, thanks to the efforts of both Bell and the Independents as well as REA financing.

(6) What is the outlook in the labor field with respect to industrial peace during 1962?

I don't look for any serious labor trouble during 1962 in the telephone industry or in other public utility industries (excluding the railroads and airlines which have special problems of their own). This is due for the most part to the relatively low labor factor (in relation to over-all operations) in the utility field compared

with other industries. Telephone companies have the largest payroll factor in comparison with the gas and electric utilities, but even in the telephone industry it is far lower than in retail, automotive and other industries. I expect things to be rather peaceful in the utility labor field this year. However, I do look for a year of considerable unrest in the general labor field due to the failure of the unions to see the importance of exercising restraint in demanding higher wages and shorter hours in the face of increased foreign competition for this country's products.

The impact of imported automobiles and foreign motion pictures are examples of how two industries have lost a substantial part of their market because foreign industries can do the job at less cost.

Our competition from the Common Market will grow. President Kennedy recognizes this and pleaded with the unions to go easy in making their demands. They listened respectfully and then went their own way, calling for higher wages and shorter hours as the only solution for creating more jobs. They're slowly strangling the goose that has been laying the golden eggs. They refuse to see the business which American industry is losing right under their noses.

There will be strikes with the backing of the labor movement during 1962 and the Kennedy administration will be caught in the middle of more than one of them. If strikes occur in steel or other key industries, they will pyramid throughout the entire economy and utilities will suffer accordingly.

EPTA Group's Meeting Studies Satellite Communications

A study group of the Conference of European Postal and Telecommunication Administrations recently met in London to consider problems which might arise in satellite communications.

Representatives of the following 12 European countries attended the three-day session: Belgium, Denmark, France, Federal German Republic, Italy, Irish Republic, Netherlands, Norway, Portugal, Sweden, Switzerland and the United Kingdom.

Among the points discussed were the possible requirements for intercontinental telecommunication facilities via satellites and the frequency space requirements these might bring about.

The group also briefly reviewed the progress being made in the construction of ground radio stations in Europe for participation in experimental tests with American communication satellites planned to be launched in 1962.

Winnie Burnett Succeeds Mayme Workman

With this issue, Mayme Workman is retiring as traffic editor of TELEPHONY, after 30 years' association with this publication—12 years as a feature writer and 18 as Traffic Editor.

In addition to her work for TELEPHONY, Mayme has served various operating companies, the Illinois Telephone Association and, since 1947, she has been executive secretary and treasurer of the Independent Telephone Pioneer Association.

On Dec. 30 she retired from active work after more than 54 years of service to the telephone industry and has taken up residence in St. Petersburg, Fla.

Upon reaching the Golden Years of a well-earned retirement, Mayme can look back over a half century of faithful service and take pride in the fact that she has been able to give help and encouragement to many young people who selected telephony as their life's work. She has the personal knowledge and satisfaction of knowing that many of the young men and women she helped in the beginning of their careers now hold responsible positions in the industry. This is one of the greatest tributes that can be paid to anyone.

During her 30 years' association with TELEPHONY, Mayme has authored more than 900 articles and we are in a position to know that scores of our readers have a deep sense of gratitude for the help and inspiration she has given them over the years.

We join our readers in expressing appreciation for her loyal and faithful service over the years and in hoping that the future years in Sunny Florida will bring her continued good health and happiness which she has so well earned and justly deserves.

We also take this occasion to announce the appointment of Winnie B. Burnett, traveling chief operator of Southwestern States Telephone Co., Brownwood, Tex. as traffic editor to succeed Mrs. Workman.

Mrs. Burnett has been associated with the telephone industry and the communications field for 31 years and is a recognized traffic authority. We feel we are fortunate in securing the services of a woman with such a broad knowledge and experience in telephony to serve as our Traffic Editor.

One of the busiest women in telephone traffic in the Southwest, Mrs. Burnett assists chief operators in Texas, Arkansas, Louisiana, and in Oklahoma, and travels 310 days a year in performance of her work. She also writes instructive material on traffic procedures for the Southwestern States company, and works closely with the traffic engineer and traffic supervisor in planning future services.

Mrs. Burnett speaks before many groups, has been on the program of a number of state telephone conventions, and has written various articles for publication. She authored the series, "T.O.P. Topics" which appeared in TELEPHONY (Jan. 9, Feb. 6, Apr. 23, May 7, and July 16, 1960).

Mrs. Burnett started her telephone career in March, 1930, with Southwestern Bell Telephone Co. in San Antonio; served, during World War II, with the Naval Air Station Communications office at Corpus Christi; and then entered the Independent telephone field with San Marcos (Tex.) Telephone Co. She has been with Southwestern States since 1953.

Respected by co-workers and the industry, she has served as chairman of the traffic committee of the Texas Telephone Association, headed the Texas chapter of Independent Telephone Pioneer Association, and is presently a board member, and participates in the activities of various local and national business and professional groups.

So, to Mayme, we say, so-long and thanks for your devotion and faithful service to TELEPHONY; and to Winnie, welcome to our midst; we are looking forward to a long and happy association.

On the next two pages Mayme presents her "swan song" under her long-standing heading, "The Operator's Corner," and Winnie presents her first article under her own title, "The Traffic Page."

THE OPERATOR'S CORNER

By MAYME WORKMAN, Traffic Editor

IT IS FABLED that the song the male swan sings just before its death is a beautiful utterance called the "Swan Song." Perhaps that is why this reference is used when one retires. Be that as it may, there comes a time in every person's life when they must say farewell—not necessarily by death, but due to retirement, change in their mode of living, or for other reasons.

It was Gen. Douglas MacArthur who said "nobody grows old merely by living a number of years. People grow old by deserting their ideas. Years may wrinkle the skin, but to give up interest wrinkles the soul."

Perhaps before this article appears in TELEPHONY I will have repaired to the Sunny State of Florida where I have established a home at 3618 Shore Acres Blvd., St. Petersburg 3, Fla. The writer is looking forward to her retirement, not because she is no longer interested in telephony but, having served in the industry in one capacity or another for almost 55 years, it is time to take a breather and enjoy the beauties of nature; to rest and relax and dream about the wonderful years and the fine people she has known in the telephone industry.

"The Operator's Corner" was born in 1932 and it has been a real joy to write these articles for traffic employes and others in the telephone industry. When I started to write I never dreamed 900 articles would be written.

It all started when I was employed as traffic supervisor for the Illinois Telephone Association. In conducting traffic conferences, girls in attendance asked many questions about their work and were eager to learn ways and means of performing a better job. In some meetings, more than 100 questions were asked and answered. It seemed a pity that only the girls in attendance in such meetings were privileged to learn more about their work, which, in turn, enabled them to give better service to their customers.

The writer asked her employer, the secretary of the Illinois Telephone Association, the late A. J. Parsons, if he thought Stanley Edwards, then editor of TELEPHONY would publish five questions and answers in TELEPHONY each week. Mr. Parsons suggested I write and ask him. Mr. Edwards said he would be glad to do so if an introduction to each set of questions and answers would be prepared for publication. The writer readily agreed in her eagerness to get the questions and answers published. As time went on, she realized it was not an easy assignment and on several occasions was tempted to throw in the sponge and call it quits. About that time a letter would be received from an operator telling the writer how helpful the questions and answers were in her daily work, or a chief operator would write and say she was using the questions and answers in conferences with her employes, and similar letters. This was the "shot in the arm" needed to continue to write.

In 1947, when the writer was employed as executive secretary and treasurer of the Independent Telephone Pioneer Association, realizing this was a big job, she thought this was the proper time to tender her resignation to the editor of TELEPHONY as a writer for the trade journal.

In a very short time she received a telephone call from R. C. (Pete) Reno saying "Mayme, I received your letter and, do you know where it is?" I replied "No." Pete said "it's in the waste basket—just keep on writing and if you are not able to prepare an article each week we will be very happy to publish everything you can send us."

In 1942, the writer was appointed traffic editor of TELEPHONY and this recognition was deeply appreciated. Writing special articles for Thanksgiving, Christmas, New Year's Day, Mothers' Day, etc., was a real pleasure. Never having a course in journalism nor training of any kind in the field of writing, what was written came from the heart with the hope that the ideas and feelings of the writer could be conveyed to others.

My late husband, Virgil Workman, was a great inspiration as he was my "Number One" admirer. He gave encouragement when it was needed and expressed pride in my accomplishments. He was thoughtful and understanding when I was weary from a hard week of traveling. I shall never forget when my biography appeared in A. N. Marquis' "Who's Who of the Midwest." He showed the publication to every person who came to our home as he beamed with pride. He was no longer here when my biography was published in the initial edition of "Who's Who of American Women."

Any success I may have achieved in life, particularly in the field of telephony, is due to the wonderful training received from my dear parents, my good teachers and the help and encouragement of my friends in the industry.

I wish to pay special tribute to my friends at TELEPHONY; H. D. Fargo Jr., president; Dan S. Fargo, vice-president and managing editor, who edited a great deal of my material; R. C. Reno, vice president and editor and my coach and advisor, and all members of TELEPHONY's staff. My affiliation with TELEPHONY has enabled me to

(Continued on page 35)

THE

TRAFFIC PAGE

By WINNIE BURNETT

THE PEOPLE who are privileged to work in the Traffic Department of a telephone company have an interesting and rewarding job. They appreciate the opportunity to render a service that is a social and a business necessity—telephone service. Most of these people realize this, and do consider such work a privilege and a challenge.

It is with just such a feeling of appreciation—and trepidation I might add—that I undertake the job of being Traffic's Girl Friday for TELEPHONY. I am humbly proud and grateful for the opportunity.

Many traffic problems are highly technical and most of the practices and procedures are minutely detailed. These technicalities and details form the structure for good standard telephone service to our customers.

The mainspring of operator service, however, is the central office personnel—the human factor. So our central office problems often start with people and end with people. It is most necessary to our customer service that these people be well trained, and this training must be kept abreast, if not ahead, of the technological changes in our equipment and methods developments.

In "The Traffic Page," I shall try to give information, both technical and otherwise, in an interesting, factual manner. Any methods and procedures for traffic operating practices are meant to be standard. If deviations occur, they will be unintentional.

Topical suggestions will be welcomed, and also questions pertaining to traffic operating.

And, dear readers, I sincerely hope we have a long and pleasant association.

Please address your suggestions and questions to The Editor, TELEPHONY, 608 S. Dearborn St., Chicago 5, Ill.

* * *

This is the season of shining resolutions and solemn intentions to mend our erring ways. Good intentions, like old soldiers, fade away, all too soon and too often. They fall victim to everyday procrastination, a human ailment with which most of us are afflicted. Of course, we rationalize our delays by saying that another time will be better, or we are too busy to start the planned or resolved alterations. Anything that is not immediately imperative can be postponed—and usually it is postponed or forgotten.

In the fast moving communications of today and tomorrow we dare not put worthwhile things off until a better time, for now is the better time. The year of 1962 has come to us with bright and amazing facts of telephonic progress, and brings promises of more, facts so startling as to be almost unbelievable. These new facts and the marvelous Direct Distance Dialing serving the whole nation—and more—point up the vital need for informed and dedicated cooperation in the telephone industry.

Just as cooperation is needed in the industry as a whole, it is needed and

(Continued on page 38)

An Open Letter to Mayme Workman

Dear Mayme;

By this time you probably are enjoying your retirement in Sunny Florida. We will all miss you so much. We will miss your interesting articles in TELEPHONY and inspiring work with the Independent Telephone Pioneers.

We are sort of used to seeing you at our conventions and we have always enjoyed your visits. And we will sorely miss your strong voice leading us in inspirational and classical songs. We especially like your inimitable rendition of "Itsy Bitsy, Teeny Weeny, Yellow Polka Dot Bikini."

Truly, at the business meetings and programs at the conventions it has been inspiring to see your smilingly understanding face in the front row. It can't be replaced, Mayme—not for me.

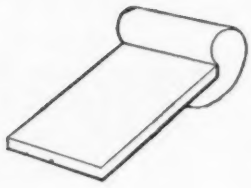
We, or course, realize you've earned your laurels and worn them gracefully and we know you're entitled to a rest. So—happy retirement to you, Mayme. May your future life of ease be as enjoyable as your life of work so obviously has been.

Come to see us and let us hear from you. There will always be a place waiting for you.

Miss us a little bit, won't you? We shall miss you so very much.

Sincerely,
Winnie B.

The Plant Man's NOTEBOOK



By RAY BLAIN, Technical Editorial Director

THE 472 COMPONENT parts of the standard "500" type telephone are manufactured from some 60 different raw materials. Steel, aluminum, zinc, copper, plastics, cotton, nylon, rayon, silk, silver, gold, cadmium, palladium, tin, rubber, wax, asphalt, and anthracite coal are just a few of the materials used in completing these telephone instruments.

For the 7,600,000 new sets manufactured last year to meet the Bell System's requirements, Western Electric used some 19 million pounds of steel, almost 10 million pounds of plastic molding compounds; 2,700,000 pounds of zinc; and nearly 2 million pounds of aluminum. More than a million pounds of copper and brass led the list of raw materials utilized in telephone manufacture.

Some rare and unusual materials are also required in telephone manufacture. Small quantities of precious metals, such as palladium, gold, and silver are used (in their pure state) inside the transmitter and on certain contact points of the switches.

From anthracite coal, carbon granules are used in the transmitter, where they are pressed by a diaphragm of aluminum alloy, to translate sound waves from a speaker's voice into electrical impulses that can be carried by transmission equipment.

•

The writer will never cease to marvel at the efficient manner in which present-day commercial airlines make use of modern communications.

One stormy night recently, we boarded a plane in Philadelphia for a flight to Washington, D. C. We loaded and went out on the line, but were required to wait for over two hours before take-off. The pilot advised us that planes were stacked up over Washington because of bad weather and that we would not leave Philadelphia until clearance was obtained for landing at the National Airport. Finally, clearance came through, and upon arrival, we landed without delay.

These delays, while annoying, are not nearly as hard on one's nerves as to be stacked up for two hours while circling in the soupy weather. This experience brought back remembrance of a sign we once noted over the door of the control tower at Crissy Field at the Presidio of California. This sign read: "It is better to be on the ground wishing you were in the air than to be in the air wishing you were on the ground".

Thanks to the efficient use of modern communications, we were able to enjoy this privilege.

•

Safety officials estimate that 70 of the 509 people killed in traffic accidents during the last July 4 weekend would have been alive today if they had been wearing seat belts! The governors of many states are currently directing that seat belts be installed in all public vehicles, as well as strongly encouraging their use in private cars.

The logic behind the use of seat belts is amazingly simple:

(1) They prevent you from being ejected.

(2) They prevent you from flying against the interior of the car.

(3) They keep the driver in position to control the vehicle in any emergency.

(4) They permit you to drive in greater comfort and with less fatigue.

It must also be remembered that after having seat belts installed, they are of no value unless they are used. It is just as easy to be caught dead sitting on your seat belts, as it is to be caught dead in a car without seat belts.

•

There is a telephone-equipped automobile in Michigan that was probably the first to have been put in operation. Owned originally by the late W. J. Moore, president of the Moore Telephone Co. of Caro, this 1914 Cadillac had an ingenious telephone system. It made use of magneto ringers and two early desk-type telephones, one in the passenger compartment, and one near the driver. This system was, and still can be used, to make both intercom and outside calls.

It is reported that when Mr. Moore wanted to make a call from the car, he would park on the side of the road near an open-wire telephone line. He then unwound two lengths of drop wire from the 50-foot reel mounted under the back seat. Each drop wire had a special clip on the end. Using a 30-foot steel rod that telescoped for carrying, he would raise the drop wires and hook the lips on the open-wire line. Once this connection was made, it was a simple matter to "ring up central" and place a call.

Unless someone has information of a telephone-equipped automobile prior to 1914, the Michigan record stands.

•

A recent popular song record tells all about "Big John", but "Big Voice" is America's modern Paul Revere.

"Big Voice" is an outdoor high level voice warning system that is designed to be used to warn and instruct an entire city and its outlying communities in case of enemy attack or natural disaster.

Cross Talk

Love resurrects people who have lost life while they live.

•

"We seldom realize the insurance value of the telephone. It not only saves millions in preventing property losses annually, but it also saves many lives by summoning assistance quickly in emergencies."—Jack White.

DATA-PHONE SERVICE

DATA-PHONE service installations continue to be provided at an ever-increasing pace. If you have not been in on the act as yet, it may well be that the time is not far off. Installations have been anticipated to number 6,000 at the end of 1961, with a forecast of more than 10 times this amount by 1965.

In an earlier issue of TELEPHONY (Aug. 26, 1961), this section described the installation of a Type 200 Model 3A at the Lima, O. branch office of Auto-Owners Insurance Co. Since that time additional installations of Dataphone service have been requested from the Lima Telephone & Telegraph Co. Included among these recent requests is one from IBM's (International Business Machines Corp.) Lima branch office. Using the Model 401A data transmitting subset, the Lima branch office will send information to a centralized regional data gathering system located at Chicago, Ill., where a type 401B data receiving subset is located.

The Data-Phone 400 series consists of low-speed parallel components, specifically designed for customers desiring to use the telephone switching network for one-way, low-volume, data-gathering applications. To meet these low-volume requirements the Model 401A transmitter and 401B receiver units were developed.

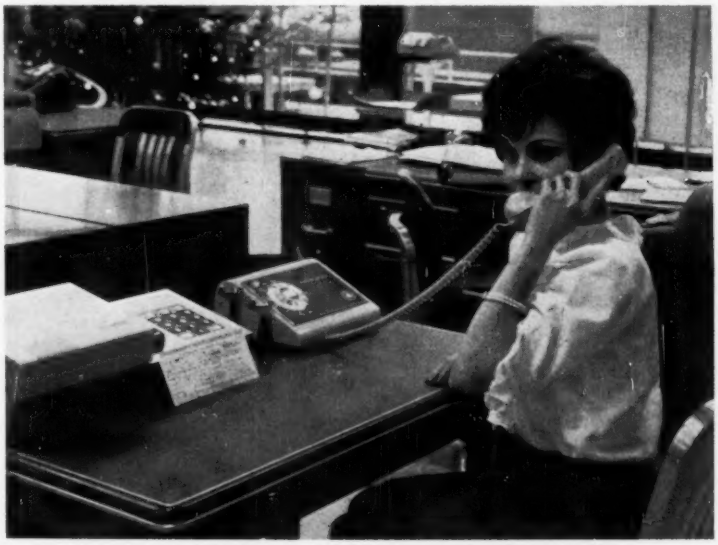
The 400A system has been designed to transmit any of 16 possible characters at speeds up to 20 characters per second (approximately 11 cards per minute or 200 words per minute).

Switch closure from a card reader or other business machine on two of eight data leads at the input of the data transmitter 401A, represents a definite character. At the data receiving subset 401B, identical closures on two of eight data leads are fed to a customer-provided card punch machine or other receiving components.

Referring to the block diagram of Fig. 1, it will be noted that the 401A transmitter contains two oscillators, each of which may be operated on any one of four different modes. Contact closure of one lead associated with "oscillator 1" and simultaneous closure of one lead associated with "oscillator 2" will create two different frequencies, by affecting the inductance in the oscillator tank circuit. Thus closure of different lead combinations of each group, which in turn results in different frequency combinations, is the basis for transmission of the various characters.

The 401A transmitter, in addition to the two oscillators used for character transmission, includes amplifier circuitry to permit monitoring of supervisory answer-back signals generated at the distant receiving subset, 401B. Speakers having an inpedance of 100 to 600 ohms at 1800 cycles per second are used to detect the receiver-generated tone. The answer-back circuitry is capable of providing approximately 25 milli-watts into a load of 150 ohms.

In addition to providing circuitry



International Business Machines, Inc. uses its 1001 card reader, upper left hand corner of desk in foreground, to "feed" a 401A data subset in transmitting data from its Lima, O. branch office to its regional office at Chicago, Ill. over the regular telephone network. The 401A Data-Phone is located at upper right on the desk.

for data transmission, the 401A Data-Phone includes a 607A1-61 telephone set which includes the housing and cards for connecting the subset to the telephone lines and business machine.

A key located at the upper left corner of the housing permits the connecting of the telephone line to either the telephone set or data-transmitting circuitry.

As is noted, by referring again to Fig. 1, tuned circuits located within the 401B receiving subset select the various frequency combinations. Outputs of the tuned circuits are coupled to an associated detector and relay circuit to affect combinations of switch closures to an associated card reader or other business machine.

As in the transmitter, a telephone set is provided to permit normal telephone service by voice and a key to permit voice or data modes of operation.

The Data-Phone 400A system has been designed for both attended and unattended operation.

In attended operation, a call is placed in a normal manner by use of the associated telephone set. Upon establishment of a voice communication, both parties agree by voice that data transmission is desirable. The associated transfer key is then placed in the data mode and data transmission is begun. (The handset must be "off hook" during either mode of transmission in attended operation, otherwise the connection through the telephone network will be broken). Restoration of the transfer key permits further voice communication.

In unattended operation, the party at the transmitting station dials up the receiving station. The receiver answers the call and informs the associated card reader or other business machine that there is a request-for-data transmission. The business machine, through a closure of contacts, affects an answer-back tone to the distant transmitter. Data transmission is then initiated by the attendant of the transmitter. At the end of transmission, an end-of-data code is sent from the transmitter, disconnecting the called receiving station.

Installation of the 401A and 401B subsets is relatively simple and consists of connecting two cords. One cord is used to connect the subset to the telephone line by normal

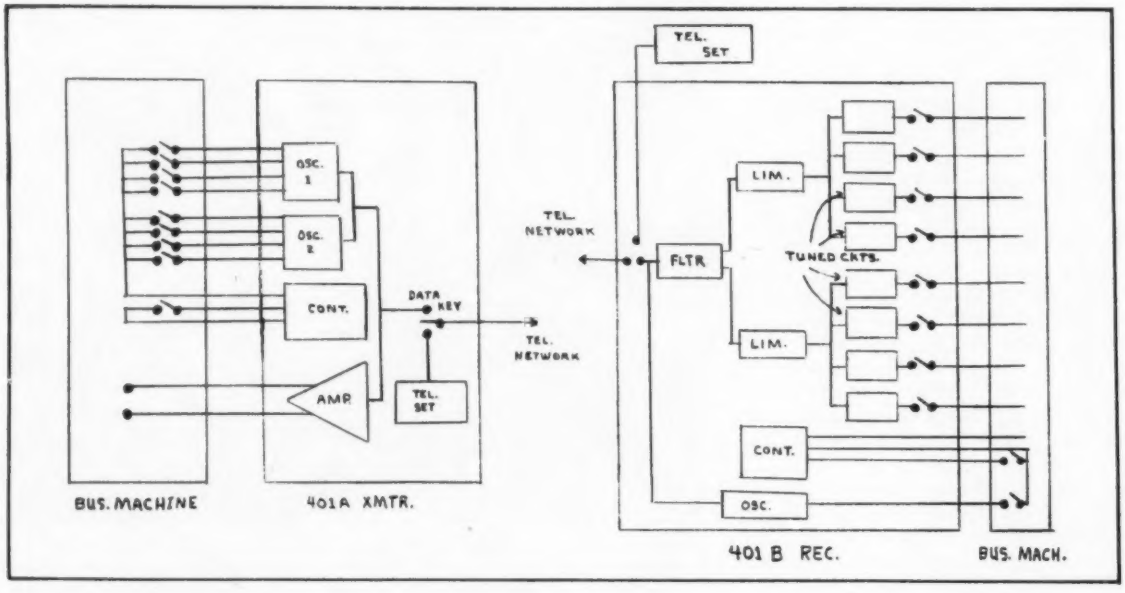


Fig. 1.

practice, while another cord, equipped with a Cannon plug, connects to the associated customer machine. The subsets are both designed for desk or table-top mounting.

Characteristics of the 400 series Data-Phone are as follows and are a part of a memorandum and attachment accompanying P.E.L. (Engineering Letter) 6757 from J. H. Felker, assistant chief engineer, American Telephone & Telegraph Co., to L. F. Wingert, vice president-operations, The Pacific Telephone & Telegraph Co.

Type of Modulation:
Quasi-Frequency Shift Keying
Max. Character Rate:
20 characters/second

Band 1 Frequencies	*Band 2 Frequencies*
600 cps (rest)	1098 cps (rest)
697 cps	1209 cps
770 cps	1336 cps
852 cps	1477 cps
941 cps	1633 cps

Transmitting Level: fixed, each tone approx. —9 dbm.

Minimum rec. level: each tone approx. — 43 dbm.

Answer-back tone level: approx./ — 5 dbm.

Maximum frequency shift of line facilities: approx. ± 10 cps.

Impedance: transmitter—800 ohms ± 200 ohms.

Receiver—700 ohms.

The Data-Phone 400 series is another in a line of subsets designed to fill the needs of the telephone companies in translating information from customer-provided equipment to a form suitable for satisfactory transmission over telephone-company-provided communication networks and facilities and in retranslating to a form suitable for operation of customer-provided receiving machines. Each Data-Phone series is designed for a specific requirement and is designed to provide a high degree of reliability in order to maintain customer satisfaction.

MICROWAVE DEVELOPMENT

IN PREVIOUS articles in this section, (TELEPHONY, July 30, 1960 and March 25, 1961), discussions were presented on the Bell System's TH and TJ microwave equipment. Both articles were based upon presentations appearing in Bell Laboratories Record.

Recently appearing in the *Record* is a discussion of a technique introduced by Bell Laboratories to increase the number of available TD-2 microwave channels.

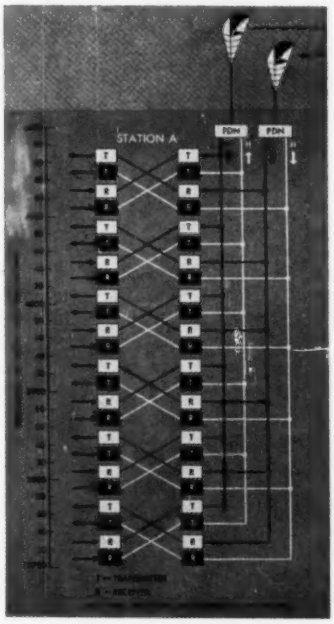


Fig. 2. TD-2 system with interstitial channels.

The TD-2 microwave channel equipment operates in the common-carrier band at about 4,000 megacycles, and each channel was designed to carry up to 600 telephone channels, or one television channel. The initial design provided for six channels.

In the recent *Record* article, H. E. Curtis discussed the new technique involved in increasing the number of channels and referred to it as an interstitial arrangement—an arrangement where additional microwave channels are slipped in between existing assigned channels.

Mr. Curtis proceeded to discuss some of the problems involved in the addition of the interstitial channels. By making reference to a diagram similar to that shown in Fig. 2, he pointed out that the regular channels, as shown with solid blocks, have transmitter carrier and received carrier frequencies in the same direction separated by 40 megacycles, or each potentially using up a 20 megacycle band between carriers.

Further, in the design of the TD-2 system, receivers and transmitters in the same direction make use of separate antennas and are mounted side-by-side on the same tower.

As will be noted by observing the diagram, each adjacent receiver carrier frequency in a given direction is separated by 80 megacycles. The initial design of RF waveguide filters prevented interaction of the received carriers.

Mr. Curtis also stated these same waveguide filters suppressed a potential source of energy as to mu-

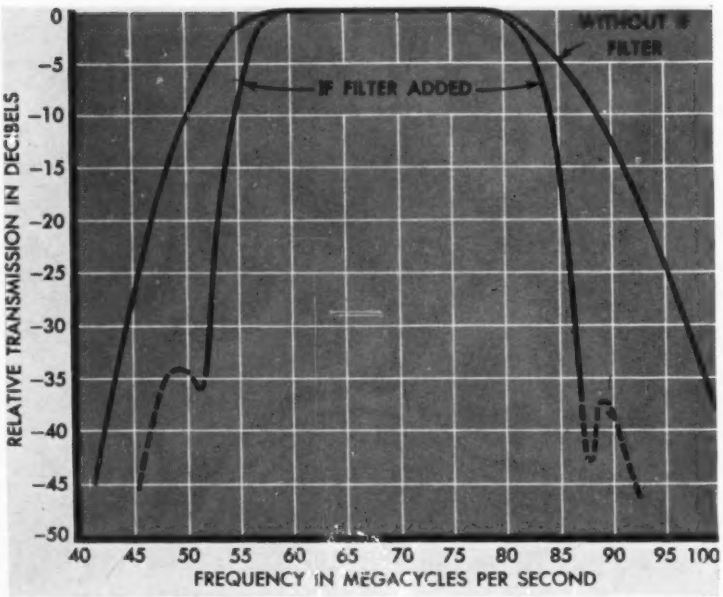
tual coupling between the transmitting and receiving antennas on the same tower. Spacing of adjacent transmitter and receiver frequencies is only 40 megacycles, as shown in the diagram.

The interstitial design places channels (black blocks) between the regular channels, and consequently, spacing is reduced to 20 megacycles between carriers. Thus, RF waveguide filters provided inadequate protection against interference from adjacent carriers.

Mr. Curtis stated that with the development of interstitial channels, special uses have been permitted however. He pointed out that where two normal TD-2 routes cross, the angle at crossover must be greater than 60 degrees, whereas if an interstitial route crosses a normal route the crossover can be as little as 9 degrees.

Development and use of the horn-type antenna by the Bell System has provided a means of making use of interstitial and normal channels over the same route, by a process known as cross-polarization. This technique involves transmitting six channels in a horizontal plane and six channels in a vertical plane. Polarization discrimination networks serve to separate the normal and interstitial groups.

This was not the cure-all however, as Mr. Curtis explained. He stated that under certain atmospheric conditions, the waves shift as they pass through the discrimination network and emerge at two output ports, resulting in some of the vertically polarized energy impinging on the horizontal polarized wave, and vice versa. This shift in energy is often referred to as the cross-polarization ratio.



Radio receiver gain-frequency characteristics showing loss obtained by placing an additional IF filter ahead of the 70-mc amplifier in each receiver.

Mr. Curtis stated that studies indicate 20 db of cross-polarization discrimination is needed to adequately separate adjacent receiving channels. Tests made by Bell Laboratories have shown that discriminations worse than 20 db might be expected less than approximately .002 per cent of the time.

With the interstitial arrangement, and the placing of adjacent carriers only 20 megacycles apart, it was pointed out that the RF waveguide filters would no longer adequately serve the function of suppression of these adjacent carriers. As a result, further changes in design were necessary. Mr. Curtis then discussed such changes in design to reduce effects of mutual coupling to permit interstitial and regular channels to operate.

The coupling loss between transmitting and receiving antennas must be sufficiently great so that the power of the interfering carrier is well below that of the incoming carrier at the receiver input. The normal transmitted power is +27 dbm (one-half a watt), and the normal received power is about −36 dbm (one-quarter of a microwatt). Thus there is a normal power level difference between the two of 63 db.

He went on to say that field tests indicate mutual coupling between antennas should provide a loss of

approximately 75 to 80 db for satisfactory operation for the normal six channels, and that even greater losses were required where 12 channel operation was assumed.

As was pointed out, many of the existing systems do not meet these specifications, and, as a result, modifications to equipment were necessary.

An additional RF filter supplied this protection. Each radio repeater includes an amplifier operating at 70 mc. These amplifiers provide a certain amount of selectivity to interference outside the normal pass band of 60 to 80 mc. The adjacent interstitial channels in each case pass through this amplifier at 50 and 90 mc; therefore by placing the new filter ahead of this amplifier, more than 30 db of loss at these two frequencies was obtained.

According to Mr. Curtis, Laboratories engineers have tested interstitial arrangements on the microwave system between West Unity, O. and Grand Park, Ill., and the results are quite satisfactory.

In view of the satisfactory results of the study, Mr. Curtis reported that interstitial operation has been applied on many of the TD-2 routes, and plans are being made for many more routes.

This in his opinion, represents an advance in the science of communication technology and the conservation of one of our vital national resources—the radio spectrum.

PUBLICATIONS

The U. S. Department of Commerce, National Bureau of Standards, has announced the availability of Handbook 81, "Safety Rules for the Installation and Maintenance of Electric Supply and Communications Lines."

The new text supercedes NBS Handbook 32 and in addition, contains revisions of the definitions and grounding rules used in connection with the code, last published in NBS Handbook 30 (National Electric Safety Code) in 1949.

Utilities which own, install, and maintain lines, and adopt these rules will be particularly interested in this new publication. The "Handbook" contains 197 pages, is priced at $1.75, and can be obtained from the Superintendent of Documents, U. S. Government Printing Office, Washington, D. C.

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The greatly increased use of mobile communications and microwave relay systems by the telephone industry is creating a serious problem . . . how to get FCC licensed technicians.

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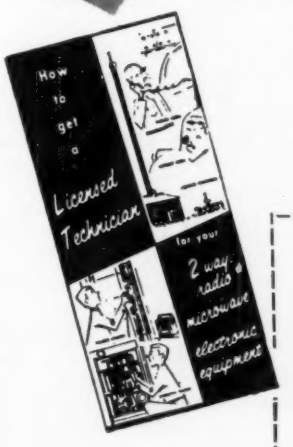
Accredited by the National Home Study Council



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Fundamentals of Line and Connector Terminal Assignments for Obtaining Traffic Load Balances

By ELMER W. SLATER*

IT WAS STATED in a previous article covering, "Step By Step Dial Traffic Metering" (TELEPHONY, Dec. 16), that an "area of fundamental importance to good traffic engineering is the correct assignment of lines and normals, which directly affects and influences the traffic load and balance of the central office trunking paths."

It is the purpose of this article to consider basic principles of line and terminal assignment administration and to show the close relationship which exists between this vital function and the engineering work performed by the central office equipment engineering departments.

In the operation of an exchange, the complex network, which is the central office, must be designed and administered so as to accommodate the service requirements on an economic basis. To provide necessary equipment to meet all emergencies and other causes of unpredictable fluctuations of traffic load would, of course, entail such high charges for telephone service as to defeat its purpose.

On the other hand, the subscriber is entitled to a sufficiency of trunking paths so that his call will be completed with a minimum of delay. An acceptable medium between these two extremes is that in 100 attempts a subscriber will fail only once to complete his call due to a no-paths-available condition. This standard is usually termed a grade of service of .01, or 1 lost call in 100 calls.

This engineered service grade (or better) is built into all traffic paths throughout the dial system, and can only be maintained if the traffic load is spread as evenly as possible over all trunking paths. Certainly, any office which has valuable equipment standing idle, while other groups are denying access because of overload, could not be considered a balanced office.

One of the more important factors in dial office management is the need to keep the originating traffic load evenly distributed over all the linefinder or lineswitch groups. These groups are usually engineered for the same call load, equipped with the same number of trunk switches, and if there are 10 linefinder groups, each group should carry approximately 10 per cent of the total originating load.

It can be seen, therefore, that there are two main points governing traffic distribution and balance:

(1) The number of, and the arrangement of, trunking paths in the central office exchange. This is primarily the responsibility of the dial traffic engineer.

(2) The traffic load distribution to and from the central office, chiefly determined by assignment of the lines (to) and by the assignment of connector terminals (from). This is usually a function and responsibility of the plant service center (wire chief's office).

The provision of the correct number of switches per linefinder board is the product of the load per line and the number of lines assignable into each linefinder board.

Linefinder equipment is designed for a maximum of 200 lines per board, with two test lines not available for use, therefore, the maximum number that can be used for subscriber lines is 198. Provision, however, for 2 per cent spare line equipments may be desirable from an administrative standpoint, which would make a limit of 194 lines per board, or if a 95 per cent fill be used, the limit would be 190 lines per board.

Assuming 95 per cent fill is used, the number of assignable lines is 190, but the average load per line is still an unknown factor. This value is found by dividing into the total measured load, the number of working (assigned) lines contributing to the originated load. For example, assume the Busy Hour 100 Call Second (BHCCS) load for flat-rate service (paystation lines are considered separately) to be 3,200 BHCCS, and the number of lines originating this load to be 1,600, the average load per line would be 2.0 BHCCS. Each linefinder board must then handle 190 x 2=380 BHCCS.

Applying this load value to the Linefinder 1.5 per cent Dial Tone Delay Table, we find 18 linefinders must be provided. Therefore, our assumed office of 2,000 lines would consist of ten 200-line boards, each equipped with 18 linefinders, and each board capable of delivering 380 BHCCS, for a total of 380 x 10=3800 BHCCS to the first selectors in the central office. Since each linefinder is connected "back to back" with a first selector, the number of linefinders required equals the number of first selectors required.

In the layout of a new office, or the addition of new line equipment to an established dial central office, stand-

*Mr. Slater is Dial Traffic Engineer of the General Telephone Co. of California.

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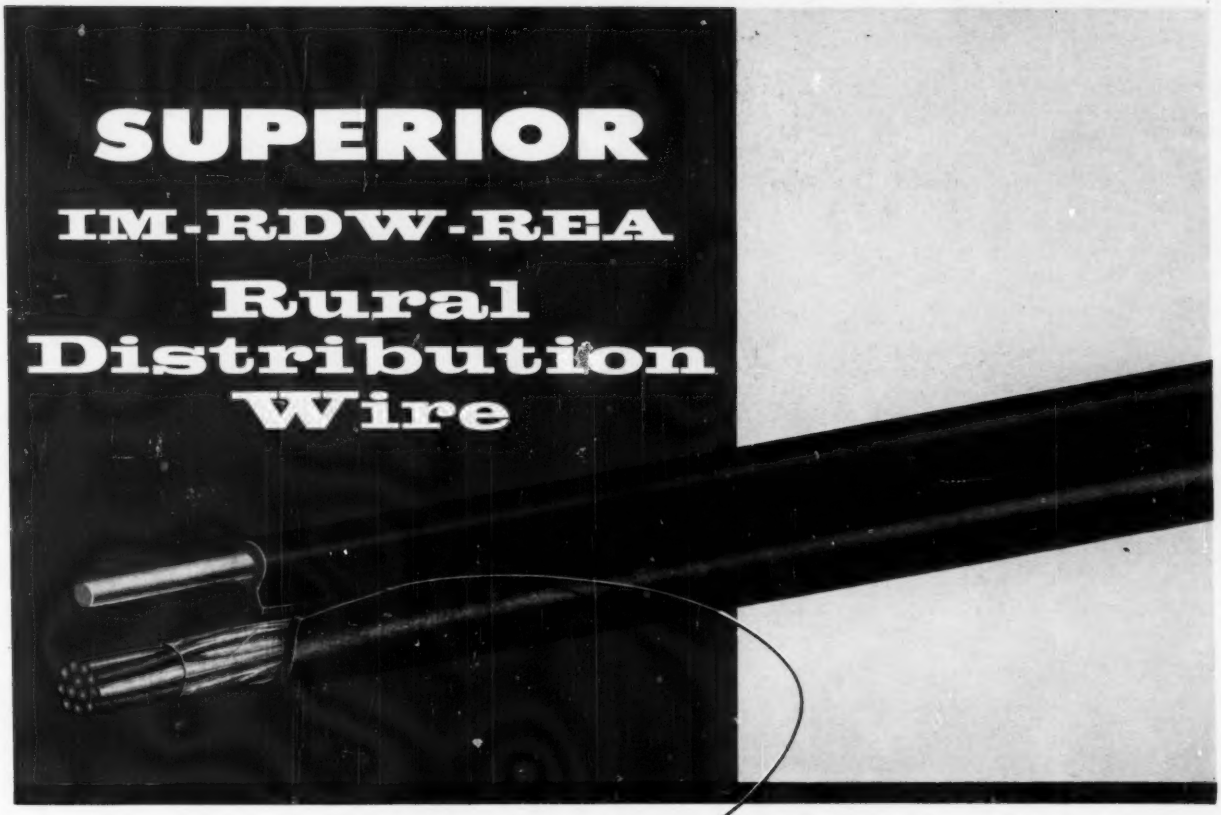

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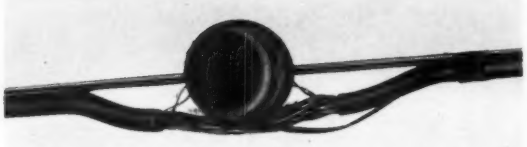

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ard cross-connect patterns are used to distribute the originating load from the linefinder boards among all the first selectors. Similarly, the first selector trunking is, in turn, grouped and graded to distribute the traffic from the first selector bank levels on a level percentage usage basis, to the succeeding trunk groups; and, in a similar manner, along each intra-office trunk path to the terminating (connector) equipment.

These efforts, costly in equipment engineering time and installation costs, to establish adequate trunking paths, may be nullified to a great extent if correct assignment procedures are not established and followed to bring about equal load distribution into the linefinder and/or connector boards.

It is important to remember at this time that we got our total load by measurement of the working lines in use. Some of these lines have different characteristics, such as calling rates, holding times, and busy hour periods, so that some were far busier than the average and some were much less busy than the average. But, the point is, the average load value of all lines was obtained. Now, if this same "MIX" used to obtain this average load per line is used in distributing the lines into the linefinder boards, then the average load per line into each board will be the same 2.0 BHCCS.

Basically, this distribution is accomplished by assigning the same number of lines to each line group and keeping the percentage of each class of service, such as 1B, 1R, 2B, 2R and 4R, approximately the same in each linefinder group.

For example, in our assumed office the present number of working flat rate lines is 1,600. We have 10 linefinder boards, so with good assignment practice we would have approximately 160 lines into each linefinder board. Secondly, each 200-line linefinder is divided into two groups: Group "A", using numbers 10-59, 110-159; and Group "B", using numbers 00-09, 60-99, 100-109, 160-199. So, in a further breakdown, we should have 80 lines in Group "A", and 80 lines in Group "B".

Only one thing remains, and that is to ensure, as far as possible, that the apportionment of the various classes of service be maintained. The method of establishing this proper "MIX" is as follows:

(1) Determine from the Line Saturation Report the number of lines in each service category.

(2) Determine what per cent each class is of the total.

(3) The percentage (to nearest whole number) determined in (2) is the per cent of each service category that should be assigned into each 100 linefinder group for proper traffic balance. Example:

Service Categories	Working Lines	Per Cent of Total	10 Boards at 160 Lines Per Board*	"A" Group 80 Lines "B" Group 80 Lines of Each Board*
PBX trunks	16	1.0	2	1
One-party business	160	10.0	16	8
One-party residence	544	34.0	54	27
Two-party B-R	64	4.0	6	3
Four-party B-R	816	51.0	82	41
Totals	1600	100.0	160	80

*Adjustment to nearest whole line.

Note 1: In the example, the four-party lines (some of which may not have four parties) are combined as one class for ease of administration.

Note 2: The PBX trunks, being such a small per cent related to the whole, could have been included with the 1B lines for this Smalltown office, but whenever PBX trunks represent a larger percentage they should be treated separately. They are considered separately here to detail the procedure met with larger installations.

With assignments apportioned as shown, the engineered trunking paths will be utilized to the same extent, equipment usage will be evenly distributed and service grades will be improved.

The inter-dependency to achieve this most desirable condition between the responsibilities of the plant service center and the equipment engineering departments should be reflected at all times by the close coordination and cooperation essential to maintain satisfactory subscriber service at a reasonable cost.

Connector Terminal (Normal) Assignments

The procedure for connector terminal assigning is essentially the same as required for line assignments, except in this case primary stations are used instead of lines. The determination of the number of switches to be provided per connector board is more involved than in the case of the linefinder switches. The terminating load not only consists of a portion or part of the local originating load, but also the traffic volume being delivered by inter-office trunk groups from local exchanges of community interest, plus the toll and intertoll traffic.

Futhermore, to a certain extent we have lost our "MIX", for the more heavily loaded PBX trunks and pay-station terminals are assigned to specific connector groups designed for this service. We will assume, therefore, that these involved considerations have been taken into account and a sufficiency of connector boards and switches for each class of service have been provided—let us say:

3 Connector boards for PBX rotary service.

1 Connector board for paystations.

26 Connector boards for flat-rate extended service.

The following is an example of obtaining a connector terminal assignment portion for a typical Smalltown central office:

Connector Terminal Service Categories	Working F.R. Primary Stations	Adjusted Per Cent of Total	Distribution In Each of The 26 F.R. Conn. Bds.
One-Party business	160	7.0	6
One-party residence	544	25.0	21
Two-party B-R	128	6.0	5
Four-party B-R	1328	62.0	51
Totals	2160	100.0	83

The present average percentage flat rate terminal fill is 2160/2600 x 100= 83.

The terminal assignments into each board closely approximate this value and, being obtained proportionately for the various classes of service considered, we may be reasonably assured our service objective has been attained. Since it is customary to use a 95 per cent fill to cover the test terminal and for number change administration, there remain 12 terminals that may be added to each board, and these should be added in approximately the same manner as the foregoing example.

It is advisable when the traffic pattern has been established to take a traffic study of the office concerned. Should such a study disclose irregularities or the unexpected development

(Continued on page 26)

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of overloads, such information should be given to the plant service center in order that corrective adjustments may be made. The memorandum covering such information should be concisely stated; for example:

"TO: Plant Service Supervisor, Smalltown.

"SUBJECT: Report of Overloaded Linefinder and Connector Boards.

"To maintain proper grade of service, assignments are not to be made in the following linefinder and connector boards until further notice:

1A Lfdr. Bd. 281 Conn. Bd.

3C Lfdr. Bd. 340 Conn. Bd.

"The following boards may now be released for additional assignments:

2B Lfdr. Bd. 412 Conn. Bd.

T. L. Fone
Equipment Engineer

With special attention given to "blocked-out" boards on subsequent reports in the event the engineered capacity has been increased, or the load having dropped due to natural turnover, the desired balance between engineered capacity and the offered load will be established.

Nineteen Telephone Loans Are Approved By REA

NINETEEN LOANS released during week of Dec. 4 by the Rural Electrification Administration will help provide new or improved service for 12,829 subscribers as follows:

McLoud (Okla.) Telephone Co.; $120,000; Dec. 4.

Proceeds will be used to help furnish initial service for 172 subscribers in the service area.

The borrower proposes to construct a new dial central office at Newalla to serve the additional subscribers. REA loans to this borrower will assist it to bring new and improved service to 817 subscribers. The McLoud exchange now furnishes dial service to approximately 640 subscribers.

•

Chequamegon Telephone Cooperative, Inc., Cable, Wis.; $156,000; Dec. 4.

Funds will aid in serving 389 new subscribers in the following exchanges: Barnes, Brule, Cable, Lake Namekagon and Marengo. Facilities required will include expanded dial equipment in the five exchange areas. REA loans to this borrower will help it to bring new and improved service to 1,599 subscribers. The 10 exchanges of the system now furnish dial service to approximately 1,195 subscribers.

•

Arkansas Telephone Co., Clinton; $580,000. Dec. 6.

This loan will assist in improving service for 773 subscribers and in furnishing initial service to 758 subscribers. The existing system consists of a combined commercial-dial office building at Clinton and a dial central office at Shirley. The dial facilities in both exchanges will be expanded and retained in use. A portion of these loan funds will be used to refinance the borrower's existing indebtedness.

Clyde McCaslin is president and manager of the Arkansas company.

Decatur (Ark.) Telephone Co.; $41,000; Dec. 6.

Funds will help provide facilities to serve 59 new subscribers and complete the authorized system. REA loans to this borrower will aid it to bring new and improved service to 464 subscribers. The borrower is now providing dial service to approximately 340 subscribers through its Decatur exchange.

•

Quincy (Fla.) Telephone Co.; $135,000; Dec. 6.

This loan will aid in installing facilities which will permit a higher grade of service for the existing subscribers; provide for additional buried plant in the Quincy exchange; furnish service without toll charge between the borrower's Gretna and Quincy exchanges and the town of Havana; and similar service between the borrower's Attapulgus, Ga. exchange and the town of Bainbridge, Ga.; and expand the combined headquarters, central office and toll center building in Quincy. REA loans to this borrower will help make possible new and improved service for 4,336 subscribers in Florida, and in Georgia. Three of the proposed four exchanges now furnish dial service to approximately 2,830 subscribers.

•

Gulf Telephone Co., Perry, Fla.; $1,525,000; Dec. 6.

Proceeds will assist in improving service for 1,737 subscribers and in furnishing initial service for 1,394. This new borrower of REA loan funds is a commercial corporation. It now furnishes dial service to the existing subscribers through its Perry exchange.

The Gulf company proposes to purchase a site and construct a new dial contral office at Keaton Beach. The borrower also plans to expand the dial equipment in the Perry central office. Service without toll charge is planned between the two exchanges of the system. A portion of these loan funds will be used to refinance the borrower's existing indebtedness.

Ernest L. Cox Sr. is president and Ernest L. Cox Jr. is manager of the Gulf company.

•

Molino (Fla.) Telephone Co.; $71,000; Dec. 6.

Funds will aid in furnishing initial service for 238 subscribers. Facilities required will include expanded dial equipment in the Molino central office. REA loans to the borrower will help to furnish new and improved service to 518 subscribers. The borrower's one exchange at Molino now furnishes dial service to approximately 280 subscribers.

•

Planters Rural Telephone Cooperative, Newington, Ga.; $225,000; Dec. 6.

Proceeds will be used to assist in furnishing initial service to 222 subscribers in the company's Dover, Hilltonia and Newington exchanges. Facilities required include expanded central office equipment in the three exchanges. In addition, loan funds will be used to install facilities to provide a higher grade of service for existing subscribers, and to complete the authorized system. REA loans to this borrower will aid it to bring new and improved service to 2,335 subscribers. The four exchanges of the system now provide dial service to approximately 2,125 subscribers.

•

IAMO Telephone Co., Coin, Ia; $573,000; Dec. 6.

This loan will help to improve service for 909 subscribers and to furnish new service to 27 subscribers in Iowa and in Missouri. This new borrower of REA loan funds was formed in January 1961 and has no existing properties. It proposes to acquire with its own general funds access rights to areas served by the following companies.

Coin (Ia.) Consolidated Switchboard Co.

Northboro (Ia.) Telephone Co.

Blanchard, Coin & College Springs Telephone Co., Blanchard, Ia.

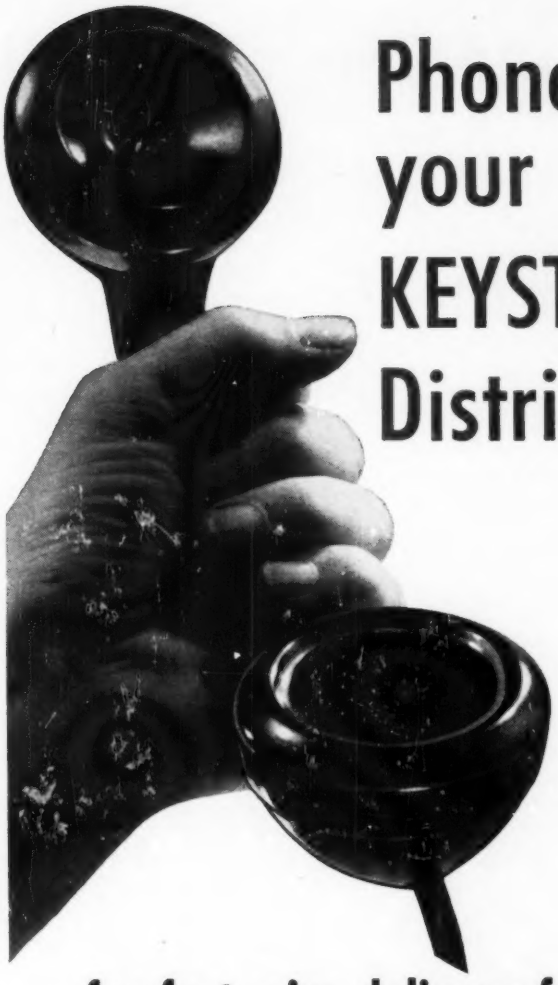
Blanchard, East Lincoln & Elmo Telephone Co., Blanchard, Ia.

Westboro (Mo.) Mutual Telephone Co.

The borrower proposes to construct a new combined dial commercial office building in Coin, Ia., a dial office at Northboro, Ia. and one at Westboro, Mo.

Raymond Huston is president of the IAMO Telephone Co. A manager will be appointed later.

(Continued on page 35)



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Ottumwa, Iowa
Peoria, Illinois
Quincy, Illinois
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Sioux City, Iowa
Sioux Falls, South Dakota
Spencer, Iowa
Sterling, Illinois
Waterloo, Iowa

Dakota Electric Supply Co.
Fargo, North Dakota

Joslyn Mfg. and Supply Co.
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Chicago, Illinois
Dallas, Texas
New Orleans, Louisiana
New York, New York
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Oklahoma City, Oklahoma
Omaha, Nebraska
St. Paul, Minnesota

Kingsport Electric Co., Inc.
Kingsport, Tennessee

Line Material Industries
Milwaukee 1, Wisconsin

Marshall-Wells Canadian Companies, Ltd.
Winnipeg, Manitoba, Canada

Midwest Telephone Supply, Inc.
Appleton, Wisconsin

The Mine & Smelter Supply Co.
Salt Lake City, Utah

Nelson Electric Supply Co.
Dallas, Texas
Lubbock, Texas

Piedmont Electric Supply Corporation
Charlottesville, Virginia

Jack Pruzan Co.
Seattle, Washington

Southern Electrical Corp.
Chattanooga Tennessee

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Lawrenceville, Illinois

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Courts and Commissions

OK Chimes, Flat Rate Mobile Service; Set Neb. Sale Hearing

The Nebraska Railway Commission on Dec. 20 gave permission to the Lincoln Telephone & Telegraph Co. to offer chime signalling equipment at a rate of 75 cents per month and $1.00 installation charge. The chime operates from telephone ringing current and has adjustable tones. It is compact and comes in a choice of gold or ivory.

On the same date, the company was authorized to continue for another six months the offering of flat rate mobile telephone service at Hastings at $25 per month. On May 10 the commission had approved the temporary suspension of measured service for the six-month trial period of flat rate service. In its current application the company stated that it was considering "extensive changes in our method of mobile service operation, including dial mobile service in our Lincoln exchange under a flat monthly charge."

•

Jan. 16 was set as the date of a hearing on the proposed sale of the Tri-County Telephone Co., Wolbach, to the Cornhusker State Telephone Co.

Mo. Commission Approves Stock Acquisition, Merger

The Missouri Public Service Commission has authorized Continental Telephone Co., St. Louis, to buy all the common stock of Twin Lakes Telephone Co., Branson (TELEPHONY, Dec. 2).

Twin Lakes operates exchanges in Branson, Blue Eye, Forsyth, Ozark, Rockaway Beach and Sparta.

The Continental company plans to acquire 70 per cent of Twin Lakes common stock and has authorization from the commission to acquire the remainder of the company's common stock if an agreement can be reached with Twin Lakes.

Also in Missouri, the commission approved the merger of Albany Telephone Co. into Inter-County Telephone Co., Gallatin (TELEPHONY, Dec. 2).

The Inter-County company has exchanges in Grant City, Gallatin, Coffey, Civil Bend, James, McFall, Pattonsburg and Winston. Inter-County has owned all the outstanding Albany stock since 1959.

OK Interim Dial Rates in Ark.

The Arkansas Public Service Commission on Dec. 12 granted Mountain Home Telephone Co. interim dial rates effective Jan. 1 (TELEPHONY, Nov. 28). These rates are subject to refund of any difference over permanent rates. The company was to have cut over to dial on Dec. 17.

Court Upholds Ind. PSC In Intrastate Rate Case

The Indiana Appellate Court on Dec. 14 refused to reconsider its Nov. 2 split decision upholding an increase in intrastate toll rates for 185 companies (TELEPHONY, Dec. 16).

George L. Diven, former Indiana Public Counselor, on Nov. 17 had asked the court to reconsider its decision that affirmed an increase in the intrastate toll rates, which the state's public service commission had granted to Indiana Bell, for all Independent companies in Indiana.

In earlier action in 1960, Mr. Diven had taken an Independent telephone subscribers' appeal from the commission order to the court. At that time, the court, insofar as Illinois Bell Telephone Co.'s 11 exchanges in northern Indiana were concerned, affirmed the order; but the court divided 4-4 on other companies affected, and transferred the case to the Indiana Supreme Court (TELEPHONY, Apr. 16, 1960).

In the Dec. 14 decision by the Indiana Appellate Court, the judges lined up again 4-4, with John R. Ax, G. Remy Bierly, Walter Myers Jr. and John W. Pfaff voting to grant Mr. Diven's request for a rehearing; and Chief Justice John M. Ryan and Judges James C. Cooper, John S. Gonas and Dewey Kelley voting to deny.

Mr. Diven has indicated he will ask the Indiana Supreme Court to consider the case.

The recent appellate court action arose from the 1958 commission order granting Indiana Bell increased rates on certain toll calls made within the state. At the same time, the commission ordered a similar increase for all other telephone companies in the state, although they had not asked for an increase.

N. C. Company Gets OK To Raise Rates $80,802

Norfolk & Carolina Telephone Co., Elizabeth City, on Dec. 21 was authorized by the North Carolina Utilities Commission to increase its rates by $80,802 a year (TELEPHONY, Sept. 30).

The company had asked for an increase of $87,488, stating that its operating costs were at a peak and that its rates have been increased only three times since it began operations. It noted that since its last rate increase in 1954, it has financed expansions and improvements by stock issues.

For the 12-month period ended Aug. 31, the company had gross operating revenues of $1,427,009 and a net operating income of $201,861, it reported.

The commission said the increase granted will increase the company's rate of return on its property investment to 5.96 per cent.

Norfolk and Carolina operates exchanges in Elizabeth City, Edenton, Buxton, Coinjock, Hertford, Kill Devil Hills, Manteo, Moyock and Sunbury.

In requesting the increase the company said higher rates were necessary because of increased costs and the expansion and improvement of services.

Deny Rate Increase Asked By Missouri Independent

The Missouri Public Service Commission on Dec. 19 denied the Doniphan Telephone Co. the $14,829 rate increase it had requested (TELEPHONY, Oct. 7).

The Doniphan company had asked for the increase on the ground that it needed more money to pay higher wages under the federal minimum wage law. The commission noted that some wages and salaries would be considerably above the minimum, and contended that the law does not require payment of wages above the minimums.

Taking into consideration the 100 new stations which were added in

(Continued on page 32)

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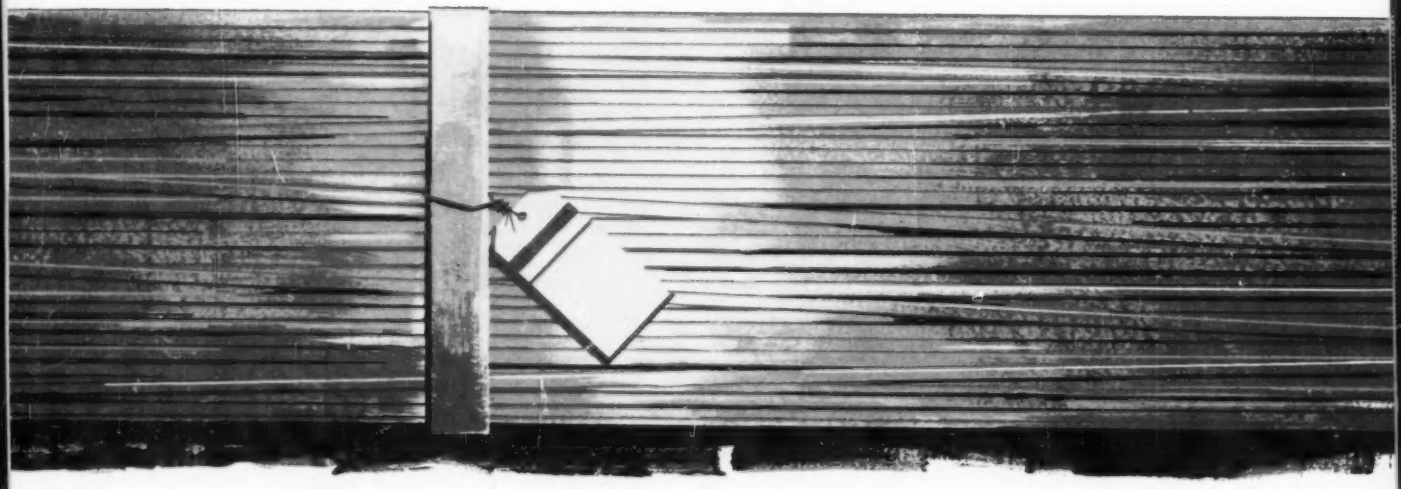

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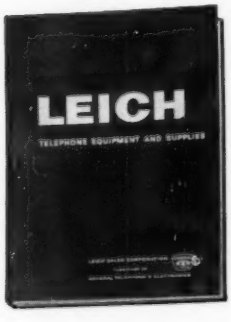

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1961, the Missouri commission concluded that Doniphan's rate of return on its investment would amount to 4.34 per cent on the basis of the present rates, and said that that would be adequate.

West Coast Registers Stock Issue With SEC

West Coast Telephone Co., Everett, Wash., has registered 110,000 shares of its common stock with the Securities & Exchange Commission. The stock is to be offered through a group of underwriters headed by Blyth & Co.

Five thousand of the shares are to be offered to the company's employe stock purchase plan. Of the net proceeds from the sale, 1.5 million dollars will be used to repay bank loans incurred to finance the 1961 construction programs of West Coast and its subsidiary, West Coast Telephone Co. of California. The balance will be used to finance a portion of its 1962 construction programs.

Set Louisiana Rate Hearing

The Louisiana Public Service Commission on Dec. 19 was to have heard the request of Forest Hill Telephone Co., Inc., Glenmora, for a rate increase.

General Forms Operating Companies in Ala. and Ga.

General Telephone & Electronics has incorporated two wholly-owned subsidiaries to administer the recently acquired properties of the Kirk Telephone System of Alabama and Georgia (TELEPHONY, Sept. 23). These companies are to be known as the General Telephone Co. of Georgia (TELEPHONY, Dec. 23) and the General Telephone Co. of Alabama.

Herbert E. Hussey, president of General Telephone Co. of the Southeast, Durham, N.C., has been named president of the two new companies.

Arnold Swallows, formerly general equipment manager for General of the Southeast at Durham, has been named vice president of the Alabama company.

The Georgia properties include 22 exchanges serving 25,600 stations. In Alabama 37 exchanges serve 43,200 telephones.

Ill. Bell Asks Telpak OK

Illinois Bell Telephone Co. on Dec. 20 asked the Illinois Commerce Commission to approve the offering of Telpak service. Telpak is designed for subscribers needing large volumes of communications channels between specified points within the state. The system may be used for private line or foreign exchange telephone service, teletypewriter service, data transmission, remote metering and supervisory control systems.

Suspend Request to Drop Toll Free Service; Ask Raise in Ill.

The Illinois Commerce Commission on Dec. 5 suspended the proposal of General Telephone Co. of Illinois to discontinue free service from its Allendale exchange to the Orio Exchange of Orio Mutual Telephone Co. Allendale will be cut-over to dial Apr. 1, 1962.

•

Also in Illinois, the commission on Dec. 4 heard the request of Palestine Telephone Co. to raise rates at its Annapolis exchange.

Grant Calif. Company Permit For New Dial Exchange

In a decision dated Dec. 5, the California Public Utilities Commission authorized California Interstate Telephone Co., Victorville, to operate a telephone exchange at California City.

Willard Wade, company president, announced that telephone installation crews have commenced work to provide California City with automatic dial service.

California Interstate Telephone Co. has been providing toll station service in the California City community since Dec. 20, 1959.

Authorize General Rate Increase for Ill. Company

The Illinois Commerce Commission on Dec. 22 authorized Inland Telephone Co., Champaign, to increase local rates in its Cullom, Danvers, Kempton, Moweaqua, and Towanda exchanges by a total of $21,000 a year.

The increase will give the company a return of 3.7 per cent on a rate base of $1,022,000.

The Inland company has 2,215 main line stations.

Asks to Go on N. Y. Board

New England Telephone & Telegraph Co. will apply for listing on the New York Stock Exchange, it was reported on Dec. 20. Currently the company is listed on the Boston Stock Exchange with trading privileges on the American exchange. NET&T is nearly 70 per cent owned by American Telephone & Telegraph Co.

Bell Officials Trade Posts

A. S. Alston, vice president-personnel for Mountain States Telephone & Telegraph Co., has been named vice president and general manager-Western

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area for Bell Telephone Co. of Pennsylvania, effective Jan. 1. Succeeding him at Mountain States is Thomas A. Van Tries, who now holds the Western area post with Bell of Pennsylvania.

SE Telephone Co. Lays Giant Submarine Cable in Florida

The largest submarine cable reported to have ever been produced by one of the major cable manufacturers was laid during October 1961 by Southeastern Telephone Co., Tallahassee, Fla., across Garniers Bayou at Fort Walton Beach.

The cable contained 1,515 pairs of 24-gauge wire, had an outside diameter of 3½ inches, and weighed 23 pounds per foot. Over-all weight, including the reel, was 33,000 pounds.

To transport a reel of cable of this bulk and weight by truck from the manufacturer to Fort Walton Beach would have necessitated detouring several states with strict weight and truck size laws. This would have almost doubled the distance it had to travel.

A solution to the transportation problem was worked out by having it sent by special railroad car to Pensacola, Fla. and loaded on to a barge by crane. From Pensacola, the barge was towed by tug via the inland waterway to Fort Walton Beach, after being delayed for three days by Hurricane Carla.

The cable had to be placed on a private easement on one side of the bayou. Mr. and Mrs. Carl E. Garrett, civic-minded citizens, granted the Southeastern company access across their lawn and beach.

The cable will provide service to several newly developed subdivisions.

AT&T Offers 300 Million Dollar Bond Issue for Sale

Directors of American Telephone & Telegraph Co. on Dec. 20 authorized the sale of a new debenture bond issue of 300 million dollars. This is said to be the largest offering of nonconvertible bonds the compnay has ever issued.

The issue will be offered for sale at competitive bidding on or about Feb. 14, 1962, with purchasers of debentures having the option of making payment for debentures, either on or about Feb. 28, 1962, or on or about April 10, 1962.

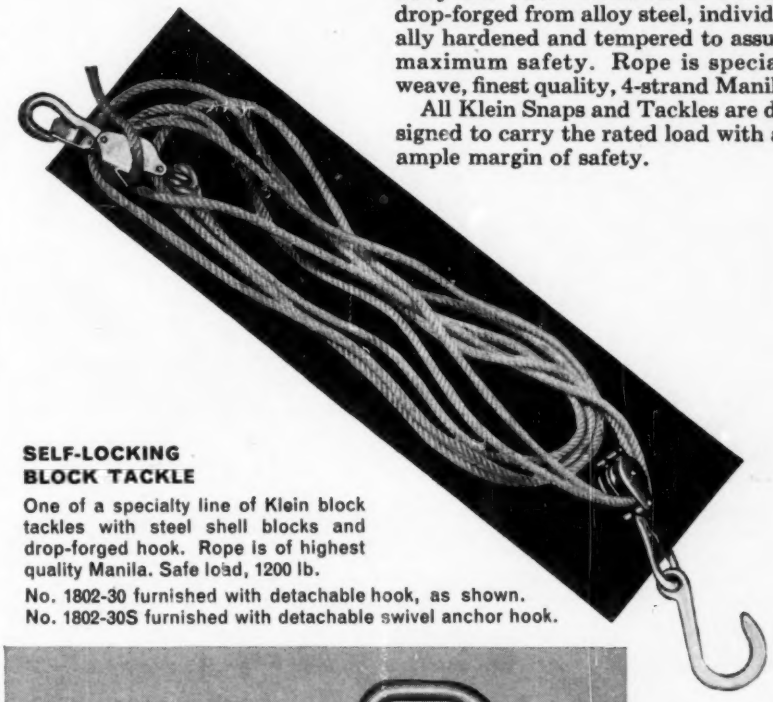
The debentures will mature on Feb. 1, 1994 and will not be redeemable prior to Feb. 1, 1967. The trustee will be The First National City Bank of New York.

The last debt issue offered by the company was on June 6, 1961, when a 250-million-dollar issue was sold. (TELEPHONY, June 17). Proceeds of

MAXIMUM SAFETY in tackles and snaps

Whether it is a block tackle or a hand line, you're assured of maximum safety when the tackles and snaps carry the Klein trade-mark. All are drop-forged from alloy steel, individually hardened and tempered to assure maximum safety. Rope is special-weave, finest quality, 4-strand Manila.

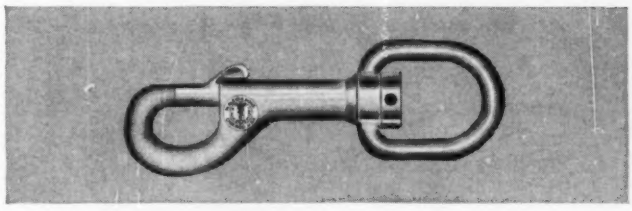
All Klein Snaps and Tackles are designed to carry the rated load with an ample margin of safety.



SELF-LOCKING BLOCK TACKLE

One of a specialty line of Klein block tackles with steel shell blocks and drop-forged hook. Rope is of highest quality Manila. Safe load, 1200 lb.

No. 1802-30 furnished with detachable hook, as shown.
No. 1802-30S furnished with detachable swivel anchor hook.



SWIVEL HAND LINE SNAP

The only drop-forged snap of this type on the market. Has swivel clevis and quick-acting plunger latch. Will take ½-inch or lighter hand lines. Safe load, 750 lb.

No. 470

FREE TOOL GUIDE

Write for 103TG Tool Guide covering the complete Klein line.

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the new issue will be used for the improvement and expansion of Bell System telephone services.

In the last seven years AT&T has sold six 250-million-dollar issues of bonds at competitive bidding.

Early this year the company raised more than 960 million dollars through the sale of common stock to shareholders.

G.B.-Canada Call Over Cable; Speed Work on Pacific Link

Her Majesty, the Queen of England, and Prime Minister Diefenbaker of Canada spoke to each other by telephone in ceremonies marking the inauguration of a new transatlantic cable, on Dec. 19.

The cable, owned jointly by Britain and Canada, is the first link in a proposed 30,000-mile around-the-world Commonwealth cable.

•

The Tenth General Report and Statement of Accounts of the Commonwealth Telecommunications Board reports that rapid progress is being made towards the provision of the Pacific Ocean cable to connect Canada, Australia, and New Zealand. The Sydney-Auckland section of this cable will be laid first, and made ready for service in 1962. It is hoped, stated the GPO, to complete the project of laying the Pacific Ocean cable by 1964.

Lovelands Elected West Coast Company's Chairman, President

The board of directors of West Coast Telephone Co. meeting on Dec. 12 elected Chester H. Loveland chairman and chief executive officer of the company. He has served in the capacity of president and a director of the company for many years.

C. H. LOVELAND

R. J. LOVELAND

Succeeding him as president is Russell J. Loveland. Russell Loveland has been with the company for 21 years and for the last nine years has been a vice president. He has also served as a director since 1955.

West Coast, which operates in various areas in Washington, Oregon and northern California, has its principal office in Everett, Wash., and maintains executive offices in San Francisco.

Russell Loveland was graduated from Cornell University in 1936 with a degree in electrical engineering. He began his telephone career with Automatic Electric Co. In 1940 he accepted a position as equipment engineer with the West Coast company in Everett. Eight years later, he was transferred to the San Francisco office of this company and jointly employed by California Water & Telephone Co., the Southwestern States Telephone Co., West Coast Telephone Co. and Western Utilities Corp.

In addition to now being president of West Coast Telephone Co., Russell Loveland is president of The Southwestern States Telephone Co., a vice president of the other two companies, and a director of all four companies.

Power Heads Heart Drive

Donald C. Power, chairman of the board and chief executive officer of General Telephone & Electronics Corp., will serve as national chairman of the American Heart Association's heart fund campaign in February. This will be his second year in that position.

Wisdom Not Enough

The prudent man may direct a state, but it is the *enthusiast* who regenerates it.—BULWER-LYTTON.

TAKE A BIG STEP TOWARD SAFETY WITH DUO-SAFETY LADDERS

... CUSTOM DESIGNED FOR TELEPHONE MAINTENANCE WORK!

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Type D — a truly great extension ladder built in strict accordance with safety regulations. Rungs are second growth hickory, reinforced with steel rods and equipped with special automatic locks and Duo-Safety's famous Safety Shoes. Made with either straight or parallel side rails, Type D is available in one, two or three sections — in a large variety of sizes. Write for free catalog on all Duo-Safety ladders.

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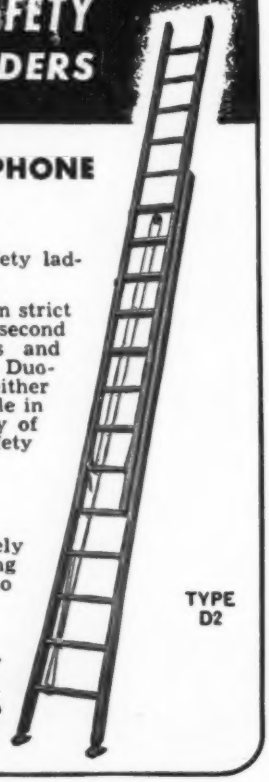

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MAYME WORKMAN

Concluded from page 12

establish friendships throughout the nation, Central and South America, Canada, and many European countries.

Telephone folk are the finest people in the land and as Charlie Weaver would say *"these are my people!"* You are *"my people,"* and, although I shall not be as intimately associated with you in the future as I have been in the past, you will never be forgotten, for you shall always be an important part of my dreams and my memories.

The writer has sung many songs for you and with you, during the years she served in the telephone industry, and while a "swan song", although beautiful, indicates a sad occasion, she wishes her retirement to be a happy occasion, for her and for all of her friends in the telephone industry.

I have tried to give my best to my work through the years and you have given me your love, friendship and cooperation when I needed it. I am starting a new life in a new environment among new as well as old friends. You, too, will be a part of my new life for you shall always live in my memory. So—in the beautiful language of my Hawaiian friends "Aloha nui loa!" (farewell and much love).

P.S. If by chance you are passing through St. Petersburg be sure and give me a ring or better still drop by and see me. The latchstring will always be out for my friends in the telephone industry.

REA TELEPHONE LOANS

Continued from page 26

Hohman Telephone Co., Pelican Rapids, Minn., $647,000; Dec. 6.

Funds will assist in furnishing initial service for 628 subscribers and in improving service for 554. This new borrower of REA funds has recently purchased the Lake Park Telephone Co. It also plans to acquire a portion of the Pelican Rapids exchange from the Pelican Telephone Co. The acquired facilities are now serving the subscribers who will receive improved service as a result of this loan. A new dial central office will replace the Lake Park magneto facilities, and a new dial central office will be constructed on the western shore of Pelican Lake to serve around the whole lake.

Benjamin W. Hohman is president and Kenneth Hohman is manager of the Hohman company.

•

Steeleville (Mo.) Telephone Exchange; $139,000; Dec. 6.

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ENTRANCE
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for
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U.S. Patent No. 2,977,402
Model TBM Mast provides complete service entrance facilities for outdoor telephone booths with the definite plus advantages of lower cost and easier installation. Raises power lines for specified ground clearance.
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Meets Code Requirements
LOOKS BETTER The TBM Mast is engineered for the job. Adds to the appearance of any booth.
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REMOVABLE Can be moved from one location to another. Simply disconnect lines and pull mast out of ground sleeve.

Utility Service Co., Inc.

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Proceeds will aid in furnishing new service for 234 subscribers in its service area. Central office equipment in all four exchanges will be expanded to serve the new subscribers. A portion of the loan funds will be used to complete the authorized system. REA loans to this borrower will help it to bring new and improved service to 1,861 subscribers. Three of the proposed four exchanges are now furnishing dial service to approximately 1,150 subscribers.

•

Doniphan (Mo.) Telephone Co., $743,000; Dec. 6.

This loan will assist in furnishing initial service to 551 subscribers and in improving service for 476 subscribers. The borrower purchased the dial exchanges at Greenville and Williamsville and the common battery exchange at Piedmont in 1951. The Doniphan company plans to divide each exchange area and to establish new exchanges at Clubb, Patterson and Wappapello.

New dial central offices will be constructed at Clubb, Greenville, Patterson, Wappapello and Williamsville, and a combined commercial dial office will be built at Piedmont. In addition, a portion of the loan funds will be used, together with prior loan funds, to construct dial central offices in former loan areas at Oxly, Ponder and Fairdealing. REA loans to this borrower will aid it to bring new and improved service to 2,302 subscribers. The Doniphan company now furnishes dial service to approximately 1,345 subscribers.

•

Randolph Telephone Membership Corp.; Asheboro, N.C.; $359,000; Dec. 6.

These funds will help the company serve 408 new subscribers. Facilities required include expanded central office equipment in two central offices. Loan funds also will be used to purchase a site and build new headquarters facilities in Asheboro and to install radiotelephone facilities for system maintenance. REA lonas to this borrower will assist it to bring new and improved service to 1,402 subscribers. The two exchanges of the system now furnish dial service to approximately 900 subscribers.

•

The Hinton Telephone Co. of Hinton, Okla., Inc.; $139,000; Dec. 6.

Proceeds will aid the company in improving service for 104 subscribers and in furnishing new service for 85 subscribers. The borrower plans to acquire with its own funds the Eakly Telephone Co. now furnishing magneto service to the subscribers who will receive improved service with the aid of this loan. A new dial central office will replace the existing switchboard at Eakly.

REA loans to this borrower will assist it to bring new and improved service to 1,124 subscribers. Two of the proposed three exchanges now furnish dial service to approximately 940 subscribers.

•

Four States Telephone Co., Brownwood, Tex.; $355,000; Dec. 6.

This loan will help furnish initial service for 370 subscribers and to improve service for 283 subscribers in Arkansas. The borrower plans to acquire the Imboden and the Kensett dial exchanges from the Southwestern States Telephone Co. The Four States company proposes to issue common stock for this acquisition.

The borrower proposes to acquire the existing central office building at Imboden and to install new and larger dial facilities in it; also to construct a new dial office building at Kensett. REA loans to this borrower will help it to bring new and improved service to 5,417 subscribers. The system will consist of 18 exchanges of which 10 now furnish dial service to approximately 1,785 subscribers.

•

Solon Springs (Wis.) Telephone Co., $133,000; Dec. 6.

This loan will aid in furnishing initial service for 90 subscribers and in improving service for 76 subscribers in Wisconsin and Minnesota. The borrower proposes to acquire the Farmers Cooperative Telephone Co. of Cloverton, Minn., now providing magneto service to the subscribers who will get improved service with the help of this loan.

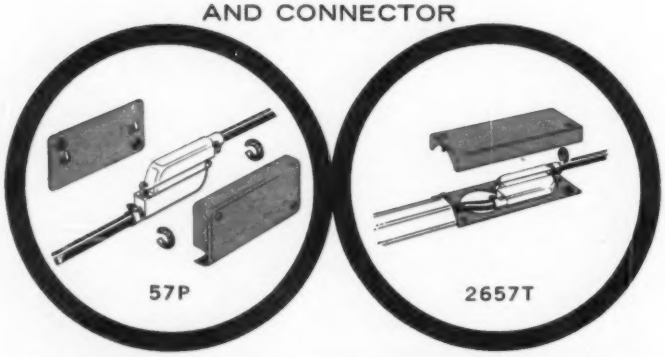
A new dial central office will be constructed at Cozy Corners, Wis. to replace the Cloverton central office facilities. REA loans to this borrower will help make possible new and improved service to 1,125 subscribers in Wisconsin and Minnesota. Three of the proposed five exchanges of the system now furnish dial service to approximately 525 subscribers.

•

Inland Telephone Co., Champaign, Ill.; $165,000; Dec. 8.

Proceeds will help improve service for 243 subscribers and furnish initial service to 55 subscribers. The borrower has recently acquired with its own funds the Cooksville Telephone Co. now providing common battery and magneto service to the subscribers who

TWO NEW FITTINGS TO HOUSE PLUG AND CONNECTOR



For use with plug-ended multi-button telephone sets, these two new Wiremold Service Fittings are available in blue-beige, smooth enamel finish (57P), and non-glare, light gray finish (2657T). Use 57P for wall mounting; use 2657T for floor mounting with overfloor duct (1500 or 2600 Wiremold) or with underfloor duct, and for wall mounting with 4" box. Phone for data sheet 636.

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will receive improved service with the aid of this loan. A new dial central office will replace the Cooksville exchange facilities. REA loans to this borrower will help make possible new and improved service to 3,187 subscribers. Five of the proposed seven exchanges of the system now furnish dial service to approximately 2,275 subscribers.

•

The Murraysville Telephone Co., Export, Pa.; $1,287,000; Dec. 8.

Funds will aid in furnishing new service to 1,823 subscribers in the service area, installing facilities to improve service for the existing subscribers and in providing additional backbone plant for future expansion. Facilities required to serve the new subscribers include expanded central office equipment in both exchanges.

REA loans to this borrower will help it to bring new and improved service to 8,478 subscribers. The two exchanges of the system now provide dial service to approximately 5,100 subscribers.

•

Armstrong Telephone Co., Hamlin, W. Va.; $100,000; Dec. 8.

Proceeds will assist in providing initial service for 171 subscribers in the service area, providing service without toll charge between the borrower's Hamlin exchange and the Branchland exchange of the United Utilities of W. Va., and in furnishing additional toll facilities. A portion of these funds will be used to complete the system authorized under the prior REA loan.

To Keep Tabs on Kids, N.J. Moms Start Chain Call System

Mothers in Randolph Township, N. J., have instituted a chain telephone system to keep them informed on their children's whereabouts in case the youngsters are delayed in getting home from school in bad weather.

Operation "Don't Worry Mom" calls for mothers to telephone each other when there are school bus delays, breakdowns, early closings because of bad weather, or emergencies.

One of the chairmen of the operation said that last year, concerned parents seeking to learn where their children were, flooded the school with calls and invariably the lines were busy.

The new system works as follows: The school will call a mother who will call five other mothers, who will call five others and so on until all the parents are notified.

The chairman said that it is estimated that within 10 minutes the parents of 1,200 elementary school children will know what the emergency is.

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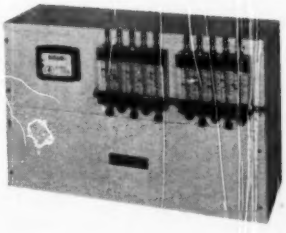

FLOW METER PANEL
PART NO. FMP 10

Wall mounted, gives visual reference of how much each cable is consuming plus a volume record meter for the total output of the unit. Each individual flow meter has manual shut-off valve.

Write for Bulletin No. FMP 10-1-61

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LOS ANGELES

Order from your Telephone Supply Distributor

THE TRAFFIC PAGE

(Continued from page 13)

necessary between the various departments of a telephone company. To be worthwhile, cooperation must be knowledgeable, for without the know-how, willingness is a lame partner. And so our management people must have the know-how in order to instruct and inform the people under their supervision. Let's start our New Year off by fully instructing the supervisory people and by clearly defining their duties. Let's make this resolution:

"Be it resolved that the supervisory people in this office shall have their duties, responsibilities and corresponding authority clearly defined, and that they shall receive the necessary training for the fulfillment of these duties. Be it further resolved that these supervisors will receive the full cooperation of the chief operator and her staff."

Such a resolution may sound simple, but do *you* take time to *define* the supervisory duties and then *train* the new supervisor in fulfilling her responsibilities? Or do you spend much time and thought in the selection of a new supervisory person and then assign her to such work with little or no training at all? Sometimes a "little" training is worse than no training, because the new supervisor may try to apply the fragmentary instructions to all situations. The result of such action is usually unsatisfactory and could be disastrous.

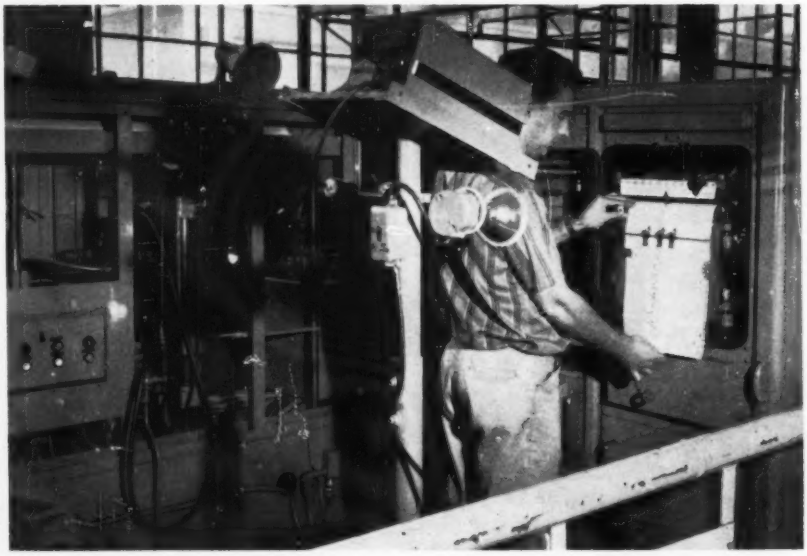
Why not make up an outline or job worksheet for the supervisory position concerned? It is not too difficult to do and certainly provides an excellent method of following through on the necessary items of instruction and performance.

The job of Service Assistant falls easily into three parts: Floor Supervision, Progress Training and Observation Activities, and Instructor Training. Along with these activities, of course, must be the ability to get along with people. Conversational skill also is a necessity, for a supervisory person must be able to talk easily in order to properly and interestingly convey instructions.

Let's consider this job by the Five-Step Method:

STEP I. FLOOR DUTIES:

Flow of traffic.
Operating techniques and practices.
Operator contacts.
Customer contacts.
Trouble reporting.
Force administration-seating arrangements.
Records.



General Cable Corp. has installed an eccentricity test set in the jacketing departments at its telephone cable plants at Bonham, Tex.; Emeryville, Cal.; Monticello, Ill., and Tampa, Fla. This testing equipment is called a sheath uniformity gauge and continuously measures the sheath thickness during the extrusion of plastic-jacketed telephone cables. Data are continuously recorded on a strip chart by a special ruler which measures the sheath thickness in thousandths of an inch. At Emeryville, a closed circuit TV camera (See cut) is mounted in front of the strip gauge chart at the operator's station. By observing the TV monitor, the tuber operator at the far end can make any needed corrections immediately.

Emergency or unusual call handling.
STEP II. DAY-TO-DAY TRAINING:
Outward observations.
Traffic operating programs.
STEP III. SUBSEQUENT TRAINING:
Progress observations.
Continuous training.
STEP IV. SPECIAL ACTIVITY:
Conversational skill.
Operator interviews.
STEP V. INSTRUCTOR WORK:
Initial training of operators.
Toll-DSA-auxiliary.

This Five-Step Plan outlines the major duties of the Service Assistant job in a simple, concise way. The detail description of the duties listed under each step cannot be expressed so simply. Various offices may handle certain conditions as locally directed and this can vary from the S.O.P. (Standard Operating Practice). Generally, however, most situations are handled according to the S.O.P.

One of the major responsibilities of a Service Assistant is to see that the handling of traffic is smooth and that congestion is avoided.

TRAFFIC QUIZ

(1) Q. In the new messenger call practices, is the customer dismissed while the call is passed to the TTC?

A. No. The calling party is held on the line while the OTC operator passes the call details and secures the MG charge.

(2) Q. Should a special leave word number be used for MG calls?

A. the regular leave word number is used.

(3) Q. What disposition is made at the OTC of the MG ticket if there is a messenger charge?

A. After the call has been passed, the ticket is filed with the completed calls.

(4) Q. If there is no MG charge, what is done with the ticket?

A. The ticket is canceled.

(5) Q. How are reports of delay on the called party handled when a messenger has been sent?

A. The TTC gives delayed party reports directly to the calling party.

General Appoints James PR Director in Kentucky

Gerald F. James has been appointed director of public relations for General Telephone Co. of Kentucky, Lexington, F. C. Rahdert, president, announced on Dec. 15. James was formerly the Bloomington district manager with General Telephone Co. of Illinois. The new appointment becomes effective Jan. 15; and Mr. James replaces R. F. Kessinger, who recently resigned.

Mr. James began his telephone career in 1952 as a cable splicer's helper in Bloomington with the Illinois Tele-

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G. F. JAMES

phone Co., predecessor of General Telephone. He also served as commercial assistant and district commercial representative, division commercial representative and assistant public relations director of General Telephone Co. of Illinois, prior to his recent post.

His experience in the field of public relations includes the development and direction of company public relations programs for employes, subscribers, and the public. In addition, he has organized various community and subscriber educational and information activities, such as advertising, exhibits and civic services.

Mr. James' military service consists of two years with the United States Army.

He attended Illinois Wesleyan University, and majored in political science.

Morris, Ill. ECO Trial Ending; Data Supplied for Succasunna

The trial of the world's first electronic central office in Morris, Ill., will be formally terminated on Feb. 16, Illinois Bell Telephone Co. announced on Dec. 18.

"Results of the trial have been so gratifying, and customer cooperation so enthusiastic that our engineers and scientists have gathered all results needed from the trial," said Bernie Hemmendinger, Bell Telephone Laboratories supervisor, in Morris.

"Now that we have all the pertinent results and Succasunna, N. J., has been selected as the site for the first commercial ECO, we believe we should discontinue the Morris trial so that we can concentrate our efforts on the first commercial model," Mr. Hemmendinger said.

Illinois Bell Telephone installers will begin removing ECO telephones from the homes of Morris subscribers on Jan. 8, and will have the job completed by Feb. 16, said Del Noble, local Illinois Bell manager.

Data acquired from the Morris trial have been of great value to the Bell Laboratories in developing the commercial ECO, Mr. Hemmendinger said, adding that as a result of the Morris ECO trial, some components have been modified for the Succasunna model, while others have been completely redesigned.

There now are 421 persons participating in the ECO trial, some of them who have had ECO service in their homes since June 1960, when a few subscribers began using ECO telephones four hours a day.

Additional customers were added for the formal dedication ceremony on Nov. 17, 1960, and more were added after the dedication to reach the present total. On dedication day, Morris was the center of attention for the communications industry as officials from throughout the nation attended formal dedication ceremonies.

Since the formal dedication, more than 6,000 persons from throughout the world have visited the electronic central office in the Illinois Bell Telephone building in Morris.

More than 100 Illinois Bell, Bell Laboratories and Western Electric Co. employes have worked on the ECO since installation began early in 1959. Many of them, like Mr. Hemmendinger, have lived in Morris for long periods.

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3 Japan Companies Research "Nerve Center" for Satellite

The Scientific and Technological Agency (STA) of Japan has taken the first step toward putting a communications satellite into orbit from Japan, according to a dispatch from the Tokyo Bureau of the New York *Journal of Commerce*, dated Dec. 18.

An official of the agency stated that "TV broadcasting throughout the whole Asian region, and as far away as the United States, should be entirely possible" when the satellite is in operation. "In other words," he said, "some 25 per cent of the earth's surface would come within radio and television receiving range from Japan through our projected satellite."

Engaged in research on various aspects of the satellite project are three interested Japanese companies, Nippon Electric Co., Mitsubishi Shipbuilding & Engineering, and the Mitsubishi Electric Co. These companies are concentrating on activities relating to the "nerve center" of the satellite.

Individually, Nippon Electric will build solar batteries and perfect a radio wave relay system. Mitsubishi

Shipbuilding will study a system by which the satellite would automatically control its course. Mitsubishi Electric's contribution will be primarily a transmitter, but it also is assigned to work on a receiver for all ground installations required.

The STA expressed hope that the research by all three companies would be completed by the end of the 1961-62 Japanese fiscal year.

The official source is reported to have described the satellite as cylindrical in shape, 66 centimeters in diameter, 49 centimeters high, and weighing, complete with its solar batteries and other essential devices, about 110 pounds.

Announce New ASA Revision Affecting Communications

Alignment of safety rules for the installation and maintenance of electric supply and communication lines, to coincide with current practice and new technical developments, is noted by the American Standards Association in announcing approval of a revised American Standard on the subject.

Developed by the 20-member C2 sectional committee of the National Bureau of Standards, "American Standard Safety Rules for the Installation and Maintenance of Electric Supply and Communication Lines, C2.2-1961" was eight years in preparation. It supersedes the standard approved in 1941.

The revised standard consists of definitions; grounding rules; and Part Two of the National Electrical Safety Code, which concerns construction and maintenance of overhead and underground lines, relations between various classes of lines; clearances; grades of construction; loading for grades; strength requirements; line insulators; rules for underground lines; and miscellaneous requirements. Changes were made in approximately 150 rules and definitions, ASA states.

According to the ASA, sectional committee work is proceeding toward revisions of the four remaining American Standards that comprise the American Standard National Electrical Safety Code. These standards undergoing revision are American Standard Safety Rules for the Installation and Maintenance of Electrical Supply Stations, C2.1-1941; American Standard Safety Rules for the Installation and Maintenance of Electric Utilization Equipment, C2.3-1941; American Standard Safety Rules for the Operation of Electric Equipment and Lines, C2.4-1939, and American Standard Safety Rules for Radio Installations, C2.5-1940.

Among the organizations represented on the revisions committee are the ASA telephone group and the Rural Electrification Administration of the U.S. Department of Agriculture.

Published by the NBS, copies of American Standard C2.2-1961 are available at $1.75 each from the ASA, Dept P 273, 10 East 40th Street, New York 16, N.Y. or from the U.S. Government Printing Office, Washington 25, D.C.

Buckeye Telephone & Supply Named by Whitney Blake Co.

The appointment of the Buckeye Telephone & Supply Co. as a distributor of Whitney Blake Co. telephone wire and cable has been announced by Charles G. Cumpstone, sales manager of Whitney Blake.

Buckeye Telephone & Supply Co., which covers the states of Minnesota, Iowa, Illinois, Wisconsin, Michigan, Indiana, Ohio, Kentucky, West Virginia and Western Pennsylvania, is located at 1250 Kinnear Road, Columbus 21, O.

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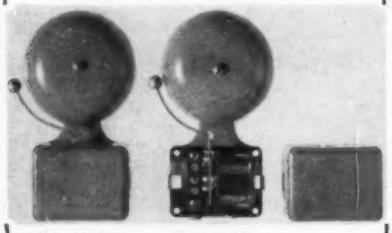

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Maine Independent to Develop Sugarloaf Microwave Center

After more than a year of negotiations, Robert M. Bass, president of Sugarloaf Mountain Corp. and Kenton E. Quint, president of Somerset Telephone Co. of North Anson, Me., announced on Dec. 13 that a long-term lease of the summit of Sugarloaf Mountain, Maine's fast-growing ski development, has been signed, giving Somerset Telephone Co. exclusive rights to develop the mountain top as a modern communications relay center.

Initial installations to be made during the summer of 1962 will be installations of microwave systems to provide high quality toll circuits to the rapidly growing area between Kingfield and Stratton.

These basic microwave facilities can be expanded to provide television transmission to and from the Sugarloaf ski area, if such transmission is ever needed, it was announced.

The 4,000-foot mountain is said to be an ideal location for many types of microwave and mobile radio systems, both for communication companies and private users.

The Somerset company plans to provide space and opportunity for all types of radio users to install facilities at the Sugarloaf location.

Last year, Somerset Telephone installed one of the first dial-operated mobile radio systems in the country, which is now in operation, serving a group of isolated sporting camps in the Stratton exchange area.

Leasing of the Sugarloaf mountain top location, it is stated, now makes it possible to expand this system to include other areas and provide general highway mobile service over a wide area in northwestern Maine.

This location will also permit Somerset to provide its own vehicles with radio equipment, which will improve its telephone maintenance operations.

To provide the new communications service, Somerset will be required to double the number of toll circuits to each of its 15 exchanges. This, plus the exploding development of the Carrabassett River Valley between Kingfield and Bigelow as a result of the vigorous development of the area by the Sugarloaf Mountain Corp., the Bigelow Corp., the Dead River Co., and others, presented Somerset with a difficult decision as how best to provide facilities to serve an unknown future requirement for telephone service in its growing area.

The decision to go microwave appeared to be the one best suited to all possible future needs, since microwave is especially suited for expansion to practically any capacity with minimum cost, the Somerset company stated.

Binder Heads Klein & Sons Chicago, Ill. Sales Area

Mathias Klein & Sons has announced the appointment of Joseph H. Binder as district manager in the Chicago, Ill. area, including Illinois, Indiana, Michigan and Wisconsin. He will be responsible for all sales.

J. H. BINDER

Before joining Klein, Mr. Binder was associated with Goodyear Industrial Products Division in the Chicago area.

Elliot Nesvig Named Okonite Vice President—Marketing

The appointment of Elliot M. Nesvig as vice president—marketing of The Okonite Co., manufacturing subsidiary of Kennecott Copper Corp., effective Dec. 18, was announced on Dec. 20 by R. Stuart Keefer, president.

Mr. Nesvig will direct all marketing activities for Okonite's products, including rubber, plastic and paper-insulated wires and cables, splicing tapes, instrument tubing and shoewelt.

A native of Wisconsin, Mr. Nesvig was graduated from the University of Wisconsin's College of Engineering with a B.S. degree in electrical engineering, and took his master's degree in business administration at the University of Chicago.

He has been a registered professional engineer since 1950.

Formerly associated with the Pyle-National Co. in Chicago, as vice president-marketing, Mr. Nesvig also served in previous years as general sales manager of the Jefferson Electric Co., and as senior sales engineer with General Electric Co.

He is a member of the Chicago Engineers Club, the Economics Club

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International Creosoting and Construction Co., Galveston, Texas—Creosoted Southern Yellow Pine Poles. Plants Beaumont and Texarkana, Texas.

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of Chicago, the Petroleum Electric Supply Association, and the Sales-Marketing Executives of Chicago.

Bishop Mfg. Corp. Appoints Baxter Va. Representative

The appointment of Andrew H. Baxter of 412 Albee Bldg., Washington, D. C., as sales representative for the state of Virginia was announced recently by Frank McCormick, vice president, Bishop Mfg. Corp.

The Bishop company, founded over 100 years ago, manufactures electrical insulating tapes, compounds and special formulations for the use of telephone companies, public utilities, and electrical maintenance contractors in the U.S. and Canada.

Mr. Baxter, who has been closely associated with Bishop for many years as sales representative for Maryland and the District of Columbia, will continue to cover these territories, in addition to Virginia.

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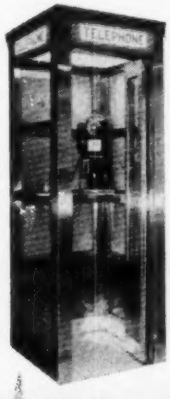

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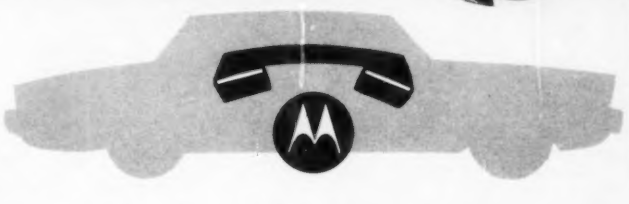

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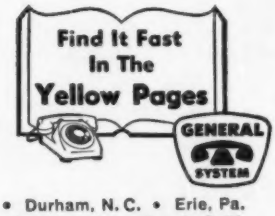

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